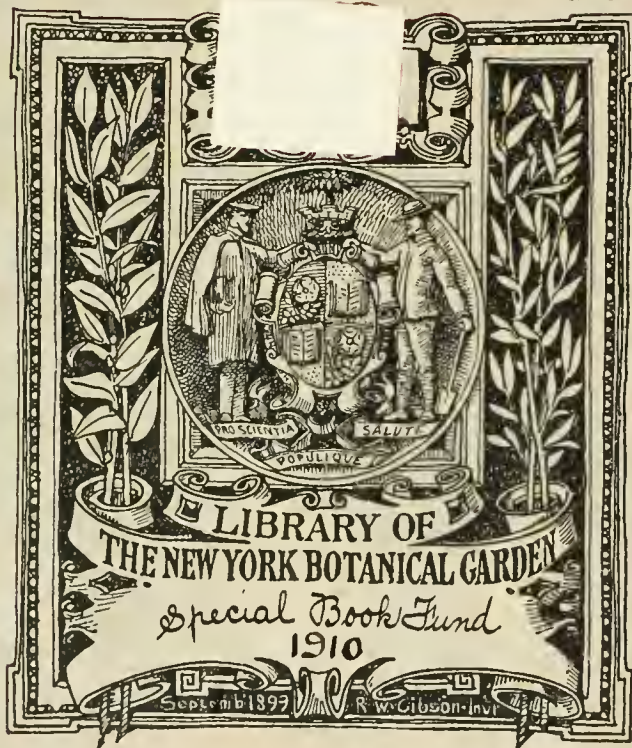




XJ.0912











THE  
JOURNAL OF HORTICULTURE,  
COTTAGE GARDENER,  
AND  
COUNTRY GENTLEMAN.

A CHRONICLE OF THE HOMESTEAD, POULTRY-YARD, APIARY, & DOVECOTE.

---

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

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BOTANICAL  
GARDEN.

VOLUME XXVI., NEW SERIES.  
VOL. LI., OLD SERIES.

LONDON:

PUBLISHED FOR THE PROPRIETORS, 171, FLEET STREET.

1874.

XI  
.0912  
Jan. June  
1874  
v. 26

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LONDON:  
PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,  
171, FLEET STREET.

## TO OUR READERS.

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A DIGNITARY of the Church has written to us a letter, from which we venture to make this extract—"The Journal is the greatest source of amusement to me. When wearied with other work, or unwell, or cross, to sit down for a half-hour and ponder my old numbers—they soothe, delight, amuse, and are inexpressibly dear to me. An old clergyman regarded me, I believe, as a kind of maniac the other day; and when I asked him if he did not love flowers he answered bluntly, 'Flowers have no soul! flowers have no soul!' Poor man! what a dreary wilderness must this lovely world be to him!" Yes, a man so minded is to be pitied; but we have no doubt he is devoted—gloomily devoted—to his clerical duties, and he might be advantaged by considering the words which came from the lips of a Bishop—"Was He mistaken Who said 'Consider the Lilies;' and Who in His hour of severest trial retired to a garden?"

The pages of our Journal, writes our kindly correspondent, "soothe, delight, amuse, and are inexpressibly dear to me;" and we say in our own names, and in the names of our contributors, that that is a most gratifying testimonial. We also know that as a medium for obtaining information, which not only every amateur but every practical gardener sometimes needs, our pages are made available; and we add, without the slightest feeling of self-approbation, that they are deservedly so referred to, for we always obtain the information required from those known to be best qualified to impart it.

With thanks to you all for the high position to which you have raised and retain us, we remain, and hope to remain,

Your Servants,

THE EDITORS.



# INDEX.

**ABERDEEN POULTRY SHOW**, 66, 89  
*Acaecis*, armata culture, 91; and Freemasons, 76; for conservatory wall, 85  
**Accrington Poultry Show**, 433  
*Acichmes* culture, 224, 281  
*Acouitum* heterophyllum, 237  
*Aceroneta* *Aceris*, 119  
*Adiantum* farleyense, 236  
*Aethionema* marmorata, 451  
*Ageratum*, white from seed, 353; Imperial Blue Tom Thumb, 326, 344  
**Agricultural returns** (1873), 123  
**Air-giving**, 251  
*Aloe*, plants for, 246  
**Alexandra Palace and Park**, 444  
**Almandas** and their culture, 313  
*Alcea*-ia culture, 116  
*Aloe* in summer, 435  
*Alpine* plants, for spring bedding, 81; for winter bedding, 6  
*Alströmmeria chilensis* and culture, 277  
*Alternanthera*, amona sowing, 238; in the north, 324, 441  
*Amaryllis* from seed, 190  
*Amaryllis* blight, 32, 123, 431; destroying, 431; in orchard house, 218  
**Andalusian's face** and legs, character, 263  
*Anemones*, in bed, 436; culture, 236, 237; drying roots, 353; from seed, 342  
**Annals**, for croquet borders, 173; culture of hardy, 231; for spring flowers, 63  
**Anthocharis** *Cardamines* butterfly, 315  
**Anthurium**, *Scherzerianum*, 209; *Wilhami* and *Sorbidum*, 419  
*Ants*, destroying, 173, 335, 511; destroying fruit, 318; in vineyard, 300, 301; on wall trees, 451  
*Aphis*, destroying green, 246  
*Aponogon* distachyon, 465  
**Apoplexy** in fowls, 555  
**Apples**, blossoms killed, 379; bud's grub, 436; critical days for, 370; pruning and training, 117; trees, pruning pyramidal, 16; bark coming off, 17; barked by sheep, 86; tree espalier wires, 107; trees, surface roots, 282; trees, treatment of old, 240; how to prune and train, 243; grafting on Pears, 245; tree roots, 256; Lady Heniker, 32  
**Apricots**, crop, 8, 9; forcing, 471; not setting, 263; shoots, pinching, 330; unfruitful, 301  
**Aquarium** glazing, 114  
*Arabis* *leptorhaphis*, 223  
*Aragearia* imbricata branches dying, 16  
*Aristolochia* failing, 391  
**Arch**, a triumphal wedding, 273  
*Ardisia* *crenolata* culture, 371  
*Aristolochias*, 332  
**Arnett**, Dr. Neil, 224  
**Arundel Castle**, 11  
**Ash**, grafting Weeping, 191  
**Ashes** of turf, 33  
**Asparagus**, bed blanks, 410; forcing, 16; after forcing, 251  
*Asplenium*, 359  
*Aucuba* *japonica* sowing, 353  
**August**, plants for showing in, 208  
*Auricularia*, 48, 270, 323; culture, 233, 324; in open ground, 307; raising from seed, 376; seedlings, 410, 423; summer-house for, 474; Manchester Show, 401; Alpine, 222; Mr. Turner's, 362  
**Avenues**, 2  
**Ayr Poultry Show**, 373  
**Azaleas**, dying, 173; after flowering, 516; grafting, 256; leaves falling, 371; Mr. Morse's, 494; moving out, 282; repotting, 318; in winter, 110

**BALDON ORNITHOLOGICAL SHOW**, 42  
**Balkarat Botanical Garden**, 60  
*Balan* culture, 323, 416  
*Bambusa* *striata*, 73  
**Bantam**, egg-bound, 24; with Crève-Cœur, 48; with other fowls, 113; hatching, 340; Black, 113, 203, 228, 264, 294  
**Barrow Poultry Show**, 174  
**Barton-co-Humber Show**, 396  
**Basket** fastenings bad, 18  
**Bath and West of England Society's Show**, 462, 476, 493, 531; 1875 Show, 494  
*Bauhinia* *natalensis*, 222  
**Bay**, the Sweet, 251  
**Beak** divided, 281  
**Bedding-out**, 418; plants, culture, 316, propagating, 316; in greenhouse, 284, white and dark foliaged, 154, tricolor, 179, various, 631, and Vines, house for, 17; hints on summer, 429, 433  
**Bedlington Poultry Show**, 436, 453  
**Bees**—roasted birds for, 173, 232; cleaning floor-boards, 173; foul brood, 177, 195; Calendar, January, 23, February, 135, March, 213, April, 291, May, 374, June, 453; combs, broken, 374, insected, 374; cross-sticks and guide combs, 374; Crystal Palace Show, 231, 218, 267, 457; destroying flying, 18; dress, 293; driving, 322, 339; drones, in March, 286, with swarms, 456; drone slaughter, 524; entrance, 376; experience with, 249; honey extractor, 304; famine, 32, 46; feeding, 133, 177, 196, modes of, 267, continuing, 453, strong, 396; fact vs speculation, 479, 51; flowers for, 32; food for, 47; refusing food, 285; attacking hive, 458; removing hive, 257; examining hive's interior, 284; removing of all from hive, 250; hives, 173, Maryatt's, 376, Pettigrew's, 332, 396, ants in, 374; crown-openings, 376; forsaking hive, 512; stocking Neighbour's hives, 572, bar-frame, 436; removing from hives, 73; weak in small hive, 340; what is honey? 23; is honey re-swallowed? 72; and honey at shows, 31, 157; feeding and exhibition of honey, 113; produce, 322; honey crystallised, 374; Humble, 8; hopeful signs, 523; in 1874, 71; keeping in 1873, 46; keeper's calendar, 23; loss of, 26; management, 158, 232, general, 248, modern, 213, Mr. Pettigrew's, 249; madding, 489; noises to settle, 321; pastureage, 71; for profit, 135, 249; ejecting pupa, 211; the queen, 312, 338, 357, 395, 437; adding Lizardian queen, 301; queen nursery, 501; salt for, 24; season's commencement, 193; slinger, 438; weight of stock, 358; weak stock, 48; use of stocks, 158; stocks, dead, 232; stock blown over, 438; stings, 177; super, 173; removing super, 416; anpers at shows, 24; anpers filled artificially, 136; in supers, 158; putting on supers, 322, and swarming, 358; not working in super, 396; supering, 45, 358, 376, 502; forced swarming, 514; swarm returning, 52; early swarm, 353, 372; artificial swarming, 339, 375, 455, 489; artificial and natural swarming, 501; Bonner's method of artificial swarming, 521; second artificial swarm, 416; two early swarms, 434; swarming, 416; not swarming, 324; preventing swarming, 489; stock after swarming, 416; transferring, 114, 214, 268, 524; uniting, 178; plea for weak, 357  
**Best**, culture, 318; sowing Chilean, 245; ornamental, 227; raising from seed, 41, stringy, 301  
**Belfast Canary Show**, 112, 134; Poultry and Bird Show, 63  
**Belgian horticulture**, 79  
*Beschorneria* *Tonelli*, 297  
**Bicton House** fire, 295  
**Bignoniads** and their culture, 344; radicans culture, 353  
**Bill** twisted, 82  
**Birch** trees, caterpillars destroying, 354  
**Bird** diary, 126  
**Birds**, sewing, 262  
**Birmingham Columbarian Society's Show**, 70  
**Blackbird** not singing, 3-2  
**Blackburn Pigeon Show**, 63  
**Blackburn Grass**, 196  
**Blenheim**, Fontaine's vineyard, 293, 410; orchard house, 333, 341, 863; House, 275  
**Blood** as manure, 85

**Blossoms**, protecting from spring frosts, 163  
**Boilers**, cast-iron, 203; Green's, 168; Patent Chimney, 412; which to prefer, 347; and heating apparatus, 269  
**Bois** *immortel*, 371, 474  
**Bone** dust for fowls, 114  
**Bonea**, bruising, 105  
**Booth** Mr. W. B., 511  
**Borders**—flowers for, 4, 32, 90, 145, 200, 252, 277, 345, 361, 400, 463, 453; for N.W. border, 253  
**Botanic** (Royal Society's) Show, 255, 385, 402, 468, 509  
**"Botany Treasury of,"** 100  
**Bougainvillea** *spectabilis* culture, 441  
**Bouquet-holder**, 28  
**Bouquets** and cut flowers, 59  
**Bourneville**, norantina and others, 4; for greenhouse, 41; triphylla, 330  
**Boxes** on fire, 216  
**"Brahma Fowl,"** 22  
**Brahmas**, 92; on Bantam eggs, 436; broody, 113; catarrhed, 231; characteristics, 114; chickens sneezing, 312; cockerel dying suddenly, 196; Dark's plumage, 21; dark-plumaged, 458; laying soft eggs, 231; f. tenius, 231; dark feathers, 185; and Ham-burgh cross, 319; keeping not laying, 288; leg-weakness, 268; early laying, 42; not laying, 178, 193; mis-described, 363; nests, 323; plumage, 232; pullets, 236; time for setting, 72; for table, 231; tanned, 263; vent inflamed, 284; vulture-hocked, 48; weak-legged, 376  
**Breeding**, age of fowls, 178; in-and-in, 48  
**Brier** hept, sowing, 83  
**Brick** making, 151  
**Bridgnorth Poultry Show**, 131, 174  
**Bristol Poultry Show**, 88, 107, 111; removing fowls from, 139  
**Broccoli**, culture far north, 198; winter, 164  
**Bromley Poultry Show**, 88, 111, 113, 212, 255, 382; prize cards, 192, 196; seedling, 19  
**Bussels** *Floral Exhibition*, 256  
**Rudgerigars**, feeding, 214  
**Bulbs**, removing, 451  
**Burley-on-the-Hill**, 458  
**Burying** beetles, 186  
**Butcher's** broom propagation, 85

**CABBAGE** (Cow) *planting*, 319  
**Caeti**, 370; Mexican, 83  
**Caladium**, culture, 116, 317; seed, saving, 419  
**Calanthe** *curculigoides*, 456  
**Calanthes** and culture, 190  
**Calceolarias**—attacked by aphids, 516; culture, 226; cuttings failing, 282; in pots failing, 475; a second year, 496; sowing, 451  
**Calico** varnishing, 515  
**Cambridge Botanic Garden**, 295  
**Camellias**—buds and bloom, 3; buds failing, 245; for cool house, 13; for conservatory wall, 167; culture, 371; dirty, 227; flowers not opening, 129; grafting, 226; leaves spotted, 232, unhealthy, 173; mildewed, 17; moving out, 282; placing out, 353; propagating, 245; repotting, 318  
**Campanula** *coronata*, 52  
**Canadensis** *filicifolia*, 266  
**Canaries**—going blind, 250; breeding uncaged, 211; song of breeding, 250; with Bullfinch ill, 250; cayenne, feeding, 250, 502, for young, 376, canvening, 195; high-colour feeding, 158; closeness of feather, 376; colour of Buff, 376; points of Crested, 158; dying suddenly, 153; eggs soft-shelled, 418; eyes affected, 153; feeding for colour, 310; in gas-heated room, 213; Linnet mules, 502; mulea feeding, &c., 500; management, 414; moping, 524; moulting, 558, out of season, 416, unreasonably, 602; 33  
**Candle Plant**, 514  
**Canna**, culture, 263; planting, 301; roots, wintering, 451  
**Cannock Poultry Show**, 42  
**Canva**, oiled, 439  
**Carnations**, potting, 246; select, 105; Trees not flowering, 175  
**Carpet** bedding, white foliage for, 263  
**Carpet** beds, 153  
**Carrot** sowing, 171  
**Cave**, heating, 263  
**Caulliflow** planting, 303  
*Ceanothus* *dentata*, 518  
**Cedar**, plants under, 119  
**Cedrus** *atlantica*, 85  
**Celeriac** culture, 144  
**Celery**, culture, 281; guano water for, 475  
**Cemetery** planting, 312  
**Cephalotus** *filiculicaris* and culture, 327  
**Chamaerops** *excelsa*, repotting, 282  
**Chamaerops** *Elpeor*, 291  
**Charcoal**, for plants, 164; for poultry, 302  
**Chatsworth**, 125, 143  
**Chelanthus** *elegans* culture, 75  
**Chelanthia** *brunata*, 518  
**Chenopodium** *Bonne-Henricus*, 253  
**Cherries**, Bigarreau, Frogmore Early, Noir de Schmidt, 436  
**Chickens**—excrements glutinous, 489; feet contracted, 458; legs sprawling, 304; management, 5-2; taking from mother, 438; rearing artificially, 377; roosting-place, 413, 458; secured, 286; utilising cocks, 524; vulture-hocked, 286; worms to windpipe, 349  
**Chiswick House**, 385  
**Chiswick trials** of flowers, 199  
**Christmas** *Rose* culture, 86  
**Chrysanthemums**, leaves diseased, 353; after flowering, 16; potting, 189  
**Chymodactylus** *empetroides*, 85  
**Cinebora**, bark collecting 447; culture in India, 256  
**Cinerarias**—bushy, 129, forming, 105; culture, 9, 78; early, 17, 388; leaves curling, 154; maritime 41; propagating, 599; raising from seed, 41, 301  
**Cissus** *discolor* culture, 274  
**Citron** culture, 390  
**Classification** of fowls, 434  
**Clay**, burnt, as top-dressing, 151  
**Clematis**, and *Geraniums* mixed, 342; Jackmanii for bedding, 263; Sophia, 399  
**Clerodendron** *Balfourianum* and *speciosum* culture, 411  
**Climbing** plants, training, 11; for various purposes, 16  
**Clintonia** *pulchella* failing, 432  
**Cloth** covers for cold frames, 511  
**Club-root** insects, 129  
**Club** *Row*, 246  
**Cnethocampa**, 472; processionera, 423  
**Coal**, economic consumption, 162  
**Cochins**, and Brahmas, 178; Mr. Tudman's Partridge, 516; Partridge plumage, 219, 268; Partridge and Grouse, characteristics, 394; time for setting, 72  
**Cochlostoma** *Jacobianum* culture, 342  
**Cock**, crowing a nuisance? 43; hen-pecked, 31; inattentive, 26  
**Cockerel's** foot crushed, 178  
**Cocks**, aristocracy of, 376; for exhibition, 32; fighting, 111  
**Cockscomb** culture, 416  
**Colchicum**, *Parkinsonii*, 297; speciosum, 59  
**Colera**, in the north, 424; sowing, 28  
**Collinsia** *multicolor*, 510  
**Colorado** *Potato* beetle, 201  
**Colors**, arrangement of, 261  
**Columbarian Society**, Northern, 111  
**Combs**, sifting, 92  
**Composts**, 187; for plants, 105; turning heap, 105  
**Condition**, in fowls, 247; in poultry, 191; powder, 214  
**Conservatory**, glass for, 234, 226; construction and heating, 245; heating small, 390  
**Cook**, crowing, 437  
**Cook**, small, 497  
**Corn** *Poultry* show, 87  
**Corn** *Salad*, 173  
**Cossus** *liquipedia*, 254  
**Cotoneaster** *Simmondsii* sowing, 41; grafting, 106

- Covent Garden Market, 24, 48, 72, 93, 114, 156, 158, 174, 184, 214, 282, 251, 268, 286, 294, 332, 340, 358, 376, 416, 439, 459, 483, 502, 532; covering, 133; prices, 198
- Cover, shrubs for, 353
- Cowao's heating system, 301
- Cowslip seed producing *Primrose* and *Polyanthus*, 434
- Creosoting wood, 318
- Crook-Crook, 340; cock, 407; hen, 517; double-yolked egg, 340
- Crocus, bulbs, planting, 17; cancellata, 483; flowers cut-off, 4, 8; *Imperati*, 182
- Crop, pendant, 395
- Croquet ground, 129, 151
- Cross-bred hen, 192
- Croton variegatum culture, 107
- Crystal Palace, bee and honey show, 285; Canary Show, 175, 212; Flower Show, 380; Rose Show, 5, 8
- Cucumbers, 450; bed, reheating, 85; culture, 495; diseased, 471; fertilising, 451; in frames, 151, 490; gao-greased, 432; to hotbeds and houses, 104; malformed, 431; and Melon houses, 369, 391, 493; plants stopping, 518; roots clubbed, 390; shadocks, 105; shoots, stopping, 319; young damping, 371
- Currents, black unfruitful, 353; bush pruning, 32; to hotbeds and houses, 516; variegated, 497
- Cuttings, planting, 171; propagation by, 351; striking, 283
- Cyanophyllum magnificum culture, 496
- Cyclamens, culture, 246; liquid manure for, 245; *pe sicum punctatum*, 252; seedlings, 86; sowing and culture, 495
- Cyca revoluta, 421; fine, 365
- Cytusae, compact plants of, 411
- DAHLIAS**—*ABORDEA*, 236; *ATEMA*, pegg-iron, 432; *AREDA*, 346, 300, 411; white, bedding, 263
- Daisies on lawn, 129
- Daphne, indica culture, 191; *indica rubra* abscissae, 337; odora straggling, 227; repotting, 105
- Date Palm in dwelling-room, 516
- Datura not flowering, 516
- Delany, Mr. J., 272
- Delphinium *Ket-leerii*, 298
- Dendrobium, culture, 76, 431; *hedys- osmum* culture, 190
- Deutzia gracilis culture, 293
- Devizes Poultry Show, 44, 63
- Dichroa in chickens, 261
- Dicksonia arborescens, 359
- Dijon Botanic Garden, 71
- Diospyros virginiana, 261
- Disa Hieracellii, 263
- Docks and Dandelions, destroying, 301
- Dogs, breeding, 54; hair coming off, 376; slightly mangy, 396
- Dorewater Poultry Show, 209, 230, 247
- Dorking Poultry Show, 109, 131
- Dorkings, 92; and Brahma crosses, 219, 263; cock's comb fallen, 193; cock prostrated, 396; at Kendal Show, 181; sickly, 214; yard for, 133
- Doryopteris nobilis unhealthy, 36
- Doryphora decem-punctata, 201
- Dorsaria difformis, sensitiveness of, 139
- Dover Poultry Show, 319
- Draining needed, 282
- Drilling, hand-drill, 173
- Dropsy in fowls, 322
- Dublin Poultry Show, 21, 355
- Ducklings feeding, 54; hatching late, 18, 42
- Ducks—profitable breeds, 43; with fowls, 232; intelligence of, 338; man- agement, 214; marking, 286; rear- ing young, 396; Aylesbury moulting, 243; Buenos-Ayres, 158; Pekin, 160; Rouen, 92, 243, laying, 322
- Dudley Poultry Show, 302
- Dwelling, influence of, the, 164
- EAST LONDON FLORICULTURAL SOCIETY**, 310
- Echeveria glauca culture, 129
- Edelweiss, 502; time, 6, 5
- Echinocactus Cunninghami, 385
- Egg-eating hen, 196
- Eggs—blood-stained, 114; broken inter- nally, 361; colour of, 396; fertile, 138; fertilised, 153; forewelling sex of, 214; fowls for, 72; imperfect, 177; imported, 321, 416; keeping, 323, for sowing, 321; lime water to preserve, 250; packing for travelling, 43; per- centage of, 195; preserving, 304; produce of, 72; producers, 88, 118; production of, 174; proportion hatched, 158; rate of laying, 93; shell-less, 231; thin-shelled, 45; soft, 358; unproductive, 696; testing vi- tality, 896; sold by weight, 454; in winter, 193; pale-yolked, 304
- Elephant Hawk Mo, 234
- Elm, caterpillar destroying, 354
- Emets, destroying, 335
- Eucephalartos*, 451
- Endive, Carter's, earth-blanching, 51; Round-leaved Batavian, 55, 95
- Entomological gleanings, 170
- Entomological Society's Meeting, 121
- Epacris, dying, 173; after flowering, 190; propagation, 85
- Epidendrum, crinitiflorum, 299; Lindley- anum, 385
- Epworth Poultry Show, 394
- Eranthis hyemalis culture, 193
- Erisia, after flowering, 190; pruning, 370; Cavendishii, pruning, 173
- Eucalypti and other Australian plants, 332
- Eueharia amazonica, continuance of bloom, 78; culture, 95; in glass case, 172; rearing, 371; coronata culture, 301
- Evergreens, under trees, 516; very exposed, 85
- Exposed trees and shrubs, 16
- Eyes of hen closed, 236
- FABRICATION POULTRY SHOW**, 172, 155
- Farm poultry, improving, 337
- Feather-cutting fowls, 248, 322, 375
- Feathers, falling off neck, 416; a for- tune from, 356; particularised, 411
- Feet of fowls swollen, 263
- Fernery aspect, 475
- Ferns, of St. Helena, 353, 442; in case, 391; fumigating, 353; for green- house, 173; notes on, 216, 295; in Wardian case, 351
- Fertilisation, facilitating, 144; of plants, 100
- Fertilisers, liquid *versus* solid, 270
- Ficus elastica fruiting, 197
- Fig, a good, 161; trees, out of doors, 227; management, 475, in pots, 153, 2, 7, 41, prunings, 85
- Fir processional caterpillar, 422
- Fish, Mr. D. T., 437; Mr. Robert, 1
- Flight feathers twisted, 92
- Florence International Horticultural and Botanical Congress, 235, 380, 403, 424
- Flowers, annuals for, 190; arrange- ment of cut, 151; preserving out, 100; prolonging out, 180; for drawing- room, 242; succession of, 173; supply of, 298
- Fines, jointing, 246
- Forests, influence of, 3, 9
- Forster Poultry Show, 42
- Fountain, a table, 98
- Fowls—choice of, 322; for farmers and cottagers, 319; fattening, 502; feath- erless, 396; feeding, 247, 283, at shows, 319; over-feeding, 113; leg dislocated, 92; meal for, 196; necks bare, 480; for near Liverpool, 263; separating varieties, 41; mixing vari- eties, 92; at shows, 247, 283; for limited run, 92; in small space, 113; for table, 153
- Fraxinea zeylanica, 148
- French flower show, 473
- French, old with new names, 79
- Frost and its effects, 453, 5, 5; effects of recent, 4, 9
- "Front Manual," plagiarist of, 364
- Fruit—borders, 219; coping for walls, 41; crackle, cause of, 487; culture and prospects in Lincolnshire, 314; dimorphism in, 465; why drop? 3, 4; growing on heavy soil, 459; keeping, 307; how produced, 38; packing, 246; prospects, 274, 343, 362, 419, 444, 477; storing, 305; trees, insects attack- ing, 474, renovating old, 27, 54, 167, 218, 274, shoots, pinching, 411, winter dressing, 17, 51, on wooden fence, 85
- Fuchsias, culture, 248; in greenhouse, 300; preserving specimen, 481
- Fuel, 91, 181; saving, 25, 84; value of, 115, 147, 165
- Fumigating, 225
- Fumigator, Carter's, 330
- Fungi, as an article of commerce, 445; drying, 336
- Farze, cutting down double, 330
- GALLARIA AMALYODON**, 148
- Game fowl, cups, 153; hen lace, 214
- Gapes, 250
- Garden, notes from my, 5, 53, 150, 197, 238, 274, 306; overflowed by sea, 243; parties, 377
- Gardeners' Benevolent Institution dinner, 188
- Gardeners, at the Royal Palace, 200; young, 27, 54
- Gardenias, unhealthy, 300; in winter, 85
- Geraniads, 14
- Gas, heating, 34, 273; its effects on seeds, 841
- Gaetharia procumbens, 371
- Gelastina azurea and culture, 488
- Gelastina aculeata edging, 475
- Geitaniella soil, 330
- Geological map, Sutton's, 188
- Geraniums—for bedding, 263; propa- gating bedding, 493; select bedding, 518; culture, 188; cuttings, 85; double, 173; flowers in winter, 55; to flower in August, 268; not flower.
- GERANIUMS**—Continued.
- ing, 390; growing, 172; insects on, 227, 391; leaves spotted, 220, 337, and wrinkled, 371; Sisley's double Zonal, 137
- Genera culture, 221
- Gibber Rev. W., 257
- Gibbii, select, 154
- Gladiolus corm, curious, 299
- Glassevin, among the plants at, 423
- Glass, cutter, 132; globe, plants for, 515; rough plate, 146
- Glazed structures, estimates for erecting, 367
- Glazing, frames, &c., 370, 371; new mode, 287, 338, 487; without putty, 507
- Gleichenias, 306; culture, 216, 252, 296
- Glenny, Mr. G., 429
- Gloxinia culture, 224, 281
- Godia pinnifolia culture, 245
- Goat moth, 354
- Goldfinch for breeding, 153
- Gold Withy, 226
- Gosae, becoming broody, 263; vent protruding, 358
- Goscherry bush, pruning, 393, 397
- Goscherry, preventing, 105, 228, 370, 431, 510; dropping, 431; for market and exhibition, 319; unfruitful, 338; Catherine, 385; Henan's Seedling, 385; Lord Derby and Victory, 73
- Goslings, food for, 358
- Grafting lace, 399
- Grapes—bunches enriog and shrivel- ing, 30; estimate of, 75; late-keep- ing, 49, 330; keeping in winter, 31, 95, 139; produce, 246; time for ripening, 246; scalded, 541; spotted, 390; not swelling, 370, swelling irregularly, 474; per Vine, 228, 227; weight of, 474; through the year, 97; Dr. Hogg, 53, 116; Duke of Buccleuch, 235; Gros Guillaume, 77; Mrs. Pince, 8, 119, 181, 236; Mrs. Pince's Mosaic, 180; Royal Vine- yard not setting, 516. See *Vines*.
- Grass seeds, sowing, 289
- Gravel carriage-drive, 153
- Great Harwood Poultry Show, 332
- Green fly, destroying, 161, 388
- Green Gages, origin, 308
- Greenhouse and hothouse arrange- ments, 337; arrowing stages, 16; domestic, 101; what I did with it, 197; heating, 63, 216, 263; plants for, 289, select, 41, for wall, 04
- Green's boiler, 318
- Grevillea fasciculata, 496
- Greyhound, 3, 4
- Gymnogramma triangularis, 493
- HABROTHAMUS ON TRELLIS**, 246
- Hailstorm at Milan, 511
- Hampden Poultry Show, 174
- Hants and Berks Poultry Show, 519
- Haselgreen Poultry Show, 392
- Hatching, anxieties, 452; artificially, 286
- Head of fowl, anatomy of, 391
- Heaths propagating, 35
- Heating, 33, 18, 227, 254, 312, 491; by lime-burning, 305; by hot water, 3, 9; by stoves, 5, 3
- Hackmon twice Poultry Show, 20
- Hedges and plants for, 233
- Heliotropes planted-out, 3, 0
- Heliborus niger major, 53
- Hens—atomy of, 372; and chickens
- Hempstead, 41; growing, 3, produc- tive crowing, 151; driving suddenly, 178; egg-dropping, 158; fastid- ious distance, 303; house, disinfecting, 268; laying twice a day, 324; not laying, 399; roosting for a hundred, 333; romps featherless, 340
- Hemlock angulosus, 236; planting out, 410; sowing, 254
- Herbaria, drying plants for, 514
- Hewitt, Mr. E., 69
- Hexham Poultry Show, 44
- Hitchin Poultry Show, 155
- Holland House, 35
- Holly, planting hedge, 301; leaves dis- coloured, 370, 390
- Hollyhock, bright, 493; disease, 426
- Hornet, clearing moth, 292
- Horse Chestnut, grafting, 62; propa- gation, 410
- Horticultural profanity, 611
- Horticultural provincial exhibitions, 273; select, 275
- Horticultural (Royal) Society, 9, 193, 202, 221, 347, 419, 473; Annual General Meeting, 138; Report and Statement of Accounts, 144; Committees, 79, 162, 199, 2, 5, 271, 881, 420, 462, 484; Shows, 231, 8, 8, 44, 465; country shows, 180, 240; Special General Meeting, 67; voting by proxy, 23, 97, 121, 292, 307, 324
- Hose-piping, 496
- Hotbed of dung and sawdust, 63
- Hoteia japonica after flowering, 474
- Hot-water heating, 282
- Houdans, 91; buck broken, 114; the cock, 454; characteristics, 24; de- scribed, 353; hen, 476; merits, 203
- Hoyas, carnosae, repotting, 232, 318; culture, 317
- Hyacinth Shows, 255; supporting, 262
- Hyacintha, exhibiting, 236, 307; fail- ing, 246; after forcing, 242; forced 189; rootless in glasses, 172
- Hybrid birds, 412, 432, 475, 497
- Hybridizing experiments, 332
- Hydrangea japonica pruning, 191
- Hydrophobia remedy, 353
- ICHNEUMON FLIES**, 287
- Insects, beautiful and useful, 7, 56, 118, 155, 236, 290, 346, 483; destroying, 510; exhibition, 510; gleanings about, 79
- Ionopodium acule, 227
- Ipecacuanha culture in India, 253
- Ipomoea culture, 441
- Iris Douglasiana, 148
- Ivy, under Chestnut trees, 516; leaves, holes in, patched, 356; for window box, 208
- JAPAN FRUIT**, 256
- Japanese, gardens, 202; bulbs, 203; gardeniok, 231; wheat, 236
- Jasmine, pruning White, 336
- Jerusalem Artichoke planting, 203
- Jodas, objecting to poultry, 173, 108, 228, 237; of poultry, 18; pre-publish- ing names of, 364
- KENDAL POULTRY SHOW**, 109
- Kenelken Cabage, 472
- Kettering Poultry Show, 193
- Kew Royal Gardens, 42, 45; novel- ties in, 370, 485, 6, 7
- Kilney, Bevan, forcing, 231
- King's Lynn Poultry Show, 210
- Kirkcaldy Poultry Show, 67
- Kitchen vegetables, 272
- Kitchen garden, 51, 120; formation, 242, 253, 514; shape of, 182; water for, 440
- Knowlsey Hall, 499
- LABELS AT POULTRY SHOWS**, 174
- Labour required, 318, 338
- Laecky moth caterpillars, 351
- Laelia flammea, 488
- Lamium purpureum var. aureum, 365
- Lapagoria rosea, planting outside, 93
- Laurus nobilis, 251
- Lawn—evergreens for small, 105; grass coarse, 431; mossy, 86, 353, patchy, 226, weedy, 337, 390; laying- out, 259; Lichen and Moss on, 515; mowning, 63; mowers, 245, Green's, 77; notes on, 41
- Laying obstructed, 178
- Leaf mould, 137; forming, 232
- Leaves, curled, 516; add dung hotbed, 17; skeletonizing, 428
- Leeds Pigeon, &c. Show, 520
- Leghorns, White, 285
- Leucortia perennans, 485
- Leucophaea and culture, 26
- Lice on chickens, 263
- Lilies with sculp ure, 187
- Lilium—aureum leaves curled, 451; giganteum, 474; lancifolium and aureum planting, 2, 8; not growing, 33; Saxatium and cult are, 339; from seed, 187
- Lily of the Valley, culture, 451; not flowering, 518, 331
- Lima water for worms, 63
- Litchee, 129
- Liquid manures, 493; in light soil, 17; for vegetables, 474
- Liver of fowl diseased, 268
- Lobelia, bedding, 227; blue, 227, 263; dwarf, 208; grub-eaten, 451; herbaceous, 96
- Local plants, 82
- Locheria magnifica, 105
- Loudon Fancy Canary Club's Show, 46
- Lonicera fragrantissima and Stand- ertii, 169
- Love-lies-bleeding, transplanting, 410
- Lowestoft Poultry Show, 110
- Lycena butterflies, 345
- MAKING BELLA CULTURE**, 301
- Make for fowls, 24, 114
- Manchester Horticultural Show 428; Ornithological Show, 46; Poultry Show, 19
- Manslow garden decorations, 365
- Manure, and earth, 410; for garden deficient, 516; treatment for garden 489
- Maple tree, the Boldre, 257
- Maranta zehra seed saving, 410
- Markets, 24, 48, 72, 93, 114, 181, 158, 173, 188, 214, 232, 260, 268, 286, 304, 322, 340, 353, 370, 416, 438, 453, 480, 502, 524
- Marnora rajidiscus, 204
- Martellia, 165
- Meat, making, 302
- Mealy bug in greenhouse, 474, 475
- Meconopsis Wallichii, 488
- Melbourne (Australia) notes, 353

Melons, 450; with Cucumbers, 492; culture, 362; in greenhouse, 253; setting, 451; Read's Scarlet-Bashed, 498, 5/9.  
 Mentone, 163, 184, 240; Dr. Bennet's garden at, 241.  
 Mercury, for cooking, 258; of Lincolnshire, 441.  
 Mesembryanthemum, cordifolium culture, 129, sowing 107; out of doors, 429; truncatellum, 74.  
 Meteorology of 1873, 31.  
 Method, its importance, 418.  
 Metropolitan Floral Society, 443.  
 Mice, and rats destroying, 245; field, on lawn, 492; poisoning, 130; red lead to thwart, 245.  
 Micholite's sale of plants, 365.  
 Microsperma bartonioides and culture, 361.  
 Midland Counties Horticultural Exhibition, 434, 506.  
 Midland Farmers' Club, 235.  
 Mimosa pudica and culture, 489.  
 Minoceras, 459.  
 Mistletoe propagation, 105.  
 Mitrisia coccinea, 145.  
 Morels, 386.  
 Mortar for fowls, 394.  
 Mosses, active, 511.  
 Muddy soil, 301.  
 Mouse-trap, simple, 510.  
 Mulching, 472.  
 Mushrooms, beds, 16; culture, 289; in December, 11; eaten, 492; house, 189, management, 75.  
 Musk leaves yellow, 391.  
 Myrsiphyllum asparagus, 203.  
 Myric, not flowering, 495; insects on, 570.

NAILING, 171.  
 Names, new, for old friends, 55.  
 Nautwick Poultry Show, 194.  
 Necessaries for a pouter, 362.  
 Nash Court, 147.  
 Necrophorus germanicus, 186.  
 Nectarines, thinning, 356.  
 Nenthead Poultry Show, 69.  
 Nepenthes seed, 263.  
 Nertera depressa sowing, 208.  
 Nests for sitting, 114.  
 New Forest, a bit of the, 256.  
 Newmarket Poultry Show, 499.  
 Newmorton Park, 511.  
 Northampton Poultry Show, 228; Rabbit schedule, 70.  
 Northern plants, 236.  
 Notes by the way, 74, 168, 184, 240.  
 Nannezhis geomorphaformis, 222.

OAK OF ALLONVILLE, THE CHAPEL, 349.  
 Oats, crushed, 211; ground, 394, 322, 363.  
 Oenothera riparia, 400.  
 Odontoglossums, 165; culture, 817; roseum, 148; Koehlii, 222.  
 Ogston Hall, 204.  
 Oil burning in greenhouse, 129.  
 Omphalodes verna, 446; culture, 307.  
 Onocids, 122.  
 On a plant, 105.  
 Onions, clubbing, 475; diseased, 516; tested at -eabam, 2/3.  
 Orang s, culture, 162, 390; for dessert, 267; same of 474; from St. Michael's, 48; trees, scale n, 222.  
 Orchard-house, management, 293, 299, 353; Rivers's, 356; room me, 51, 128, 179, 189, 225, 252, 370, 469, 450, 455.  
 Orchids, 360.  
 "Orchids and How to Grow Them in India," &c., 256.  
 Orchids—for amateurs, 75, 101, 122, 165; Canadian, 160; in Cucumber-house, 173; culture, 282; for garden frame, 245; list of, 451; in vinery, 105; for winter, 153.  
 Orchis mascula as a pot plant, 441.  
 Osteospermum monchiferum culture, 246.  
 Oxford Poultry Show, 452.

PACKING AND TRANSIT OF PLANTS, 979.  
 Paint, a durable green, 278.  
 Paisley Ornithological show, 41.  
 Pampas Grass, culture, 129; planting, 41.  
 Panax sambacifolius, 199.  
 Pansies, select, 3/0.  
 Paradise stock, pig paraging, 17.  
 Parrots, educating, 157; self-plucked, 114.  
 Partridge and Hamburg hen laying together, 391.  
 Partridges, food for young, 286.  
 Passifloras and culture, 435.  
 Peaches—drooping, 390; culture, 190; early-ripened, 364; forcing, 118, 217; house, arrangement, 474, a lean-to, 171, management, 281; in March, 400; from Nectarine, 451; not setting, 516; stoning, 190; trees, aphides on, 481, casting buds, 41, forcing, 164, in greenhouse, 516, management, 75, 475, pruning, 172, seedling, 62; Early Belgrave, 390; Rivers's Early Louise, 399.

Pears—bitter, 105, 180; cracking, 497; insect-eaten, 431; not keeping, 252; Paradise stock, 413; not setting, 474; various old, 216; bush, 41; trees, with hardy blossoms, 348, thinning blooms, 264, grubs on, 347, grub-eaten, 172, on heavy soil, 356, for fruit, 85, planting, 3/5, pruning pyramidal, 16, on wall pruning, 110, for pyramids, 337, summer treatment, 854, thinning, 474, surface roots, 284, unfruitful, 64, 245, for wall, 436, for Yorkshire, 41; Achan, 52, 95; Catherine, 163, 281; Passe Colmar not ripening, 3/5; Pear—for August, 353; beetle on, 353; early, 15; protecting, 490; row from quart, 17, 246; sticking, 261; for succession, 450; supporting Sweet, 263; and timice, 179; James's Prolific, 41.

Pelargoniums, culture, 188, 189, 395; leaves injured, 245, yellow, 318; potting, 370; over-crowding, 336; Zonal, culture, 107; propagating Zonal, 246.  
 Perennials, list of hardy, 391.  
 Perfumery flowers, 245.  
 Peristerian Society's Show, 59.  
 Persimmon, 264.  
 Pests of the garden, 394.  
 Pezomachus epidemic, 264.  
 "Pheasants," 22.  
 Pheasants, Gold and Silver, chicks, 438; rearing Golden, 458.  
 Phloxes, propagating, 189; select, 336; sowing, 122; Miss Robertson, 85.  
 Pholiota muscicola, 263.  
 Pigeons, select, 105.  
 Piecework, 431.

"Pigeon Book, The Illustrated," 303.  
 Pigeons—American pigeon, 434; Antwerp Carriers, 434; beak broken, 114; box, 455; building a loft, 479; in Canada, 232; points in Carriers, 135; any other class or marking, 40; crinkled, 111; Dragon for showing, 114; dying young, 458; fertility of eggs, 524; soft eggs, 480; tar on Fantails, 438; feeding, 490; low-habited, 283; Jacobins, 92, breeding Blacks, 268, crossing, Jacobins, 156, mating Jacobin or Turbit, 114; for a loft, 394; the Margate, 973; management in, 158; the Melbourne Mart, 558; nomenclature, 21, 70, 183, 235, 283; pans for, 391; polygamy in, 156, 247; Pouters, 21, classes, 88; other-colour classes, 455, 490; Pigmy and Isabell, 458; salt cat, 458; of San Marco, 522; separating after breeding, 230; shooting a prize, 182; Toy, 558; Blue Turbit, 374; vagrant, 522; at Venice, 2; Wood and Dovecot paired, 453, 479, 397, 521.  
 Pine-Apple Nursery Co's decorations, 382.  
 Pine Apples—black-centred, 475; culture, 104, 153, 393; Hamilton's system, 154; plunging pots, 225; suckers, removing, 399.  
 Pinks transplanting, 282.  
 Pinus, magnifica, 85; shoots, grubs on, 516.  
 Pip, remedy for, 322.  
 Pipes, needed for hot-water heating, 181; for spa-room heating, 199.  
 Pit, and greenhouse, 318; for propagating, 496.  
 Plane trees failing, 472.  
 Plant drying for herbarium, 514.  
 Plants, naming, 189.  
 Platanus, 163.  
 Poland, a blessing, 502.  
 Plumbago on trellis, pruning, 246.  
 Plums, dropping, 410; for east aspect, 432; shoots, scale on, 153; trees on wall, 383; varieties at Chiswick, 312.  
 Plunging material, 354.  
 Poinciana regia culture, 167, 143, 191.  
 Poinsettias, culture, 129; propagating, 432.  
 Pond cleaning, 129.  
 Portsmouth Poultry Show, 64.  
 Potato hux, American, 361.  
 "Potato Disease and its Prevention," 163.  
 Potatoes—Mr. Badger's essay, 295; Colorado beetle, 238, 314; culture, 167, 221, lazy-bed, 255, of early, 334; dig-up before ripe, 180, 189; disease, 78, 118, prizes for disease proof, 170, loss from, 435, Lord Cathcart's prize, 61; a new enemy to, 201; avoiding failures, 105; forcing, 35, 105; for garden, 244, 319; names and estimate, 79; new named, 55; planting, 128, 161, 173, 208; poodnee in Ireland, 425; protecting, 290; for light soils, 40; for stiff soil, 190; varieties, 124, 145.

Pot drainage and watering, 279.  
 Potting, 235.  
 "Poultry Illustrated Book of," 211.  
 Poultry—condition, its importance, 191; dung, 85, 153, as a manure, 274; exhibited, 154; feeder the Spencer, 302; food for, 976; forcing, 354; harem, 114; house, 24, floor, 340, heating, 256, management, 150; houses and accommodation, 175; keeping, 347, extensively, 106, 375, profitable, 11; keeper, the, 374, 391.

## POULTRY—Continued.

411, 435, 454, 476, 497, 517; management, 249; manure price, 822; mutilated, 151; marker, 107; improving farm, 371; show neglects, 11; showing, breeding, 133; travelling, 5/2; treatment at show, 519; yards, fence, 178, notes, 154, 475; yards, 214, 281, over-stocked, 502.  
 Preston Poultry Show, 65.  
 Primrose vagaries, 354.  
 Primroses, Chinese, 162.  
 Primula Auricula, origin, 62.  
 Primula—culture, 398; imperialis, 422; japonica seeds, 449; nivea, 293; from seed, 8/1; Parry, 399; sinensis, sowing, 371; viscosa, 356.  
 Prince's Feather transplanting, 410.  
 Pringlea antiscorbutica, 472.  
 Propagating case, 336.  
 Proteaceous blossoms, 591; of what use, 364, 459.  
 Pteris tricolor culture, 30.  
 Puccinia malvacearum, 550, 426.  
 Pullet, precocious, 372.  
 Pullets, egg-bound, 286; eggs for hatching, 322.  
 Pyrethrum, Golden-feather culture, 263; raising from seed, 445.  
 Pyrus japonica root cuttings, 107.

RABBIT—OR 1873, 230; ABSCISS IN, 286; Belgian Hare, 358; excluding, 41; feeding, 156; fever, 136; house, 284; 3/4; hutch, 415; kept, 284; liver diseased, 288; prizes at Northampton, 19; for table purposes, 340; scarily, 439; shows, coming, 112, 321; trees injured by, 85.

Radiisur, 221; Marmora, 204.  
 Railway Company's liability for exhibition poultry, 355.  
 Rainfall, Northamptonshire, 147.  
 Ramps, raised beds, 318.  
 Ranunculus planting, 171.  
 Raphiolepis ovata, 318.  
 Rayson, Mr. C., 249.  
 Reading Poultry Show, 519.  
 Reclaiming Peas, 396; seeds, 344, 499.  
 Red spider, 451; prevention, 341.  
 Regelia ciliata, 335.  
 Repose, what is, 337, 440.  
 Rhaphis Houletii, 222.  
 Rhododendrons, cutting-in, 390; grafting, 301; leaves eaten, 245; wintering, 390; 75; Nuttallii, 382, 419.  
 Rhopalophila, 298.  
 Ribston Pippin, 62.  
 Rockeries, 59.  
 Rockwork, fungus on, 356; and ruin, 496; plants for shaded, 246.  
 Rocky ground, plants for, 190.  
 Room, gardening 288; plants, 82, 101, 102, management, 37.  
 Rosemary overgrown, 353.  
 "Rose-book, The Amateur's," 421, 466.  
 Roses, 306; Banksian not flowering, 475; box for showing, 282; a mammoth bush, 2/9; brown-blotched, 41; budding, 192; budding blinding, 496; for ar stocks, 85; buds from, 45; for conservatory wall, 356; in Dorset, 234; election, 5, 62, 290, 311, 505; estimation of, 271; training for exhibition, 451; falling, 391, 451; flowers in winter, 55; for inc, 40; under glass, 299, 400; green fly on wall, 271; how to grow, 101; grubs, 382; growing in, history of, 217, 278, 315; Hybrid Perpetual for August, 353; injured by insects, 411; judging, 27, 60, 57; leaves mildew, 227; leggy, 390; Lyons Congress, 494; Masetti stocks, 263; manure for, 233; mauling, 431; mulching, 353; new, 504; Mr. Paul's, 293, 426, 416, Show, 491; petals, 292; in pots, 410; planting, 85; for exposed place, 62; pruning, 173; select Red, &c., 264; this season, 504; seedlings damping, 475; holes in stems, 451; war of the stocks, 3; sulphate of iron to, 432; Teas and climbers for conservatory, 374; Peach Blossom, 85; of 217, 278, 315, 401, 482; Felicite Perpetue as a stock, 32; disbudbing Marchal Niel, 34; General Von Moltke, 360; Pierre de St. Cyr, 55; Teas, 52.

Rothbury, 29.  
 Roop, 250, 415; cause of, 396; remedy, 266.  
 Ruby, 353, 40.  
 Ruby Poultry, &c., Show, 619.  
 Russells juncea culture, 105.

ST. AUGUSTINE POULTRY SHOW, 473.  
 Salixburiia adiantifolia, 370.  
 Salt for garden, 172.  
 Salt, Mr. J., 412.  
 Sand, compost and sea, 245.  
 Sandersonia aurantiaca culture, 132.  
 Santolina incana, 62.  
 Sarracenia, hybrid, 498.  
 Sashbars, size of, 245.  
 Savoy, planting, 500.  
 Sawing precautions, 364.  
 Sawdust manure, 282.  
 Saxifraga, florulenta, 456; peltata, 58.

Scarecrow, 511.  
 Sear, its meaning, 522.  
 Sciadopitys verticillata, 221.  
 Scolopendrium from vitreous off-sets, 254.  
 Scorpion alive in London, 848.  
 Screens for garden, 116.  
 Sculpture with plants, 186.  
 Scutellaria macrantha, 39.  
 Sea-kale, crowns lowering, 245; forcing, 173.  
 Sea sand for Beet-storing, 17.  
 Season, and its effects, 17, 97; Kent, 496, 507; London, and Wilt, 496.  
 Seaton Burn Poultry Show, 217, 265.  
 Seed orders, my, 120, 159.  
 Seeds, do they live? 451; vitality of, 245.

Senecio Antephorbium, Deronieuu rest. Hommaris, 355.  
 Sensitive Plant and culture, 459.  
 Sermons in stones, 408.  
 Sesia apiformis, 291.  
 Sexes of fowls at will, 499.  
 Sheffield Poultry Show, 522.  
 Shrubs for mild climate, 263.  
 Silkies, Black, 32.  
 Silkworms, 457; a Japanese, 11.  
 Simmia seeds vegetating, 245.  
 Slugs, destroying, 17, 252, 432.  
 Smoked gardens, 146.  
 Smoke from burning weeds, 313.  
 Snails and slugs, 368, 393.  
 Sneezing poultry, 340.  
 Snowdrop and its uses, 179.  
 Soil, culture, 393; preparing, 298; spilling, 95.  
 Sopbora, Weeping of Japan, 446.  
 Spalding Columbarian Society, 45, 104.  
 Spanish, cock's face, 214; hens dying, 438, 453; laying irregularly, 265; out of condition, 268.  
 Spergula pulifera, 515.  
 Spice bird, 286.  
 Stapelia Corderoyi, 149.  
 Stephanotis, in conservatory, 897.  
 floribunda and culture, 493.  
 Steudera colocasifolia, 78.  
 Stocks influence on scion, 34.  
 Stocks, Bromley, 499; spring and summer, 457, 459, 491; Ten-week, culture, 318.  
 Stoke Rochford, 406.  
 Stove, climbers, 343; culture, 441; heating, 431; plants, 498, for late summer, 173.

Strawberries—planted late in autumn, 510; forcing, 3, 459, 281; after forcing, 390; krubs about, 337; for orchard house, 355; failing in pots, 432; removing runners, 432; for light soil, 411; supporting, 511; winter, 28, 89; The Amateur, 148; early American, 256; Comte de Zans, 11.  
 Suburban gardening, 14, 37, 69, 62, 101, 127, 151, 171, 184, 246, 244, 242, 261, 290, 298, 3/6, 394, 351, 868, 388, 408, 423, 446, 494, 513.  
 Sugar Cane in New Caledonia, 610.  
 Sulphur, burning in vinery, 432.  
 Sunday, festivities of, 129.  
 Supratent, a gardener's, 82.  
 Swallows arrived, 312.  
 Swan's sex detecting, 392.  
 Syconate Dagger Moth, 110.  
 Sydney Hall, 228, 299.  
 Syringa, 431.

TAN NOT HEATING, 193.  
 Tensan's trees, tool-house, &c., 41.  
 Thermometers, alarm, 145.  
 Thorne Poultry Show, 517.  
 Thorn tree grafting, 107.  
 Thrips, paraffin for, 63; on Azalea, 105.  
 Tiffany for protection, 240.  
 Tobacco, home-grown for fumigating, 336.  
 Todea, 451; superba culture, 2/0.  
 Tomatoes, in Cucumber house, 190; with Cucumbers, 390; culture, 411; in pits, 85.  
 Towns, gardening in, 168, 811.  
 Trail, Mr. 10.  
 Trellises, 256; plants for, 232, 420.  
 Trees, encroaching, 16; overshadowing, 173; plants under, 17; as screens, 151.  
 Trenching, 171, 2/6.  
 Trichomanes, case for, 17.  
 Trichopilia crisp, 165.  
 Triclit-aetien, 49.  
 Tritonia aurea culture, 209.  
 Trumpenny, an old, 54.  
 Tunga Tsunja, 169.  
 Tuberosa culture, 245.  
 Tubs for stove climbers, 105.  
 Tufts after forcing, 184.  
 Turf, forming, 289.  
 Turkeys, 250; on hen's eggs, 232; on many eggs, 394; legs diseased, 502; law-suit about, 356; market for, 21; Nettles for, 88.  
 Tusser, Thomas, 530, 384, 425, 467.  
 Tussocks, fragrant, 1/7.

ULCERS, INTERNAL, 92.  
 Umbrella Pine, 221.

- Vandas, 123  
 Van Houtte's Nursery, 79  
 Vanilla, artificial, 256  
 Varieties, raising, 353  
 Vegetable Marrow, culture, 369; fail-  
 ing, 336  
 Vegetables, supply of, 337  
 Velich, prizes offered by Messrs. 494  
 Veltheimia viridifolia culture, 293  
 Ventilation, top, 273  
 Veronica salicifolia culture, 173  
 Villa gardening, 14, 37, 59, 92, 101, 127,  
 151, 171, 188, 206, 224, 243, 261, 280, 293,  
 316, 334, 351, 368, 388, 408, 429, 446, 494,  
 513  
 Vinery, bedding plants in, 301; clean-  
 ing, 17; constructing, 227; heating,  
 190, 227; management, 41, 227, 317,  
 389, 411, 433; Paxton, 238; ventila-  
 tion &c., 129  
 Vines— aerial roots on, 300, 318; in open  
 air, 399; blossoms blind, 366; border,  
 covering, 191; flowers for, 2 8, 10,  
 15, 16, 17, 18, 19, 20, 21, 22, 23,  
 24, 25, 26, 27, 28, 29, 30, 31, 32,  
 33, 34, 35, 36, 37, 38, 39, 40, 41,  
 42, 43, 44, 45, 46, 47, 48, 49, 50,  
 51, 52, 53, 54, 55, 56, 57, 58, 59,  
 60, 61, 62, 63, 64, 65, 66, 67, 68,  
 69, 70, 71, 72, 73, 74, 75, 76, 77,  
 78, 79, 80, 81, 82, 83, 84, 85, 86,  
 87, 88, 89, 90, 91, 92, 93, 94, 95,  
 96, 97, 98, 99, 100, 101, 102, 103,  
 104, 105, 106, 107, 108, 109, 110,  
 111, 112, 113, 114, 115, 116, 117,  
 118, 119, 120, 121, 122, 123, 124,  
 125, 126, 127, 128, 129, 130, 131,  
 132, 133, 134, 135, 136, 137, 138,  
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 587, 588, 589, 590, 591, 592, 593,  
 594, 595, 596, 597, 598, 599, 600,  
 601, 602, 603, 604, 605, 606, 607,  
 608, 609, 610, 611, 612, 613, 614,  
 615, 616, 617, 618, 619, 620, 621,  
 622, 623, 624, 625, 626, 627, 628,  
 629, 630, 631, 632, 633, 634, 635,  
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 643, 644, 645, 646, 647, 648, 649,  
 650, 651, 652, 653, 654, 655, 656,  
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 671, 672, 673, 674, 675, 676, 677,  
 678, 679, 680, 681, 682, 683, 684,  
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 699, 700, 701, 702, 703, 704, 705,  
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 713, 714, 715, 716, 717, 718, 719,  
 720, 721, 722, 723, 724, 725, 726,  
 727, 728, 729, 730, 731, 732, 733,  
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 741, 742, 743, 744, 745, 746, 747,  
 748, 749, 750, 751, 752, 753, 754,  
 755, 756, 757, 758, 759, 760, 761,  
 762, 763, 764, 765, 766, 767, 768,  
 769, 770, 771, 772, 773, 774, 775,  
 776, 777, 778, 779, 780, 781, 782,  
 783, 784, 785, 786, 787, 788, 789,  
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 797, 798, 799, 800, 801, 802, 803,  
 804, 805, 806, 807, 808, 809, 810,  
 811, 812, 813, 814, 815, 816, 817,  
 818, 819, 820, 821, 822, 823, 824,  
 825, 826, 827, 828, 829, 830, 831,  
 832, 833, 834, 835, 836, 837, 838,  
 839, 840, 841, 842, 843, 844, 845,  
 846, 847, 848, 849, 850, 851, 852,  
 853, 854, 855, 856, 857, 858, 859,  
 860, 861, 862, 863, 864, 865, 866,  
 867, 868, 869, 870, 871, 872, 873,  
 874, 875, 876, 877, 878, 879, 880,  
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 888, 889, 890, 891, 892, 893, 894,  
 895, 896, 897, 898, 899, 900, 901,  
 902, 903, 904, 905, 906, 907, 908,  
 909, 910, 911, 912, 913, 914, 915,  
 916, 917, 918, 919, 920, 921, 922,  
 923, 924, 925, 926, 927, 928, 929,  
 930, 931, 932, 933, 934, 935, 936,  
 937, 938, 939, 940, 941, 942, 943,  
 944, 945, 946, 947, 948, 949, 950,  
 951, 952, 953, 954, 955, 956, 957,  
 958, 959, 960, 961, 962, 963, 964,  
 965, 966, 967, 968, 969, 970, 971,  
 972, 973, 974, 975, 976, 977, 978,  
 979, 980, 981, 982, 983, 984, 985,  
 986, 987, 988, 989, 990, 991, 992,  
 993, 994, 995, 996, 997, 998, 999,  
 1000

## WOODCUTS.

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	PAGE.		PAGE.		PAGE.
Acronycta Aceria	277	Cyclamen persicum punctatum	412	Odontoglossum citrosamum	165
Alströmmeria chilensis	277	Elaphoglossum conforme	412	Enothera riparia	165
Anthochia Cardamines	277	Fern shelter	74	Ogston Hall, conservatory and flower garden	205
Anthurium floribundum	449	Florence International Horticultural Exhi- bition	406	Odontoglossum vulgatum	443
Apple, cordou training	117, 243	Fountain, table	98	Ophion	227
" espalier training	213	Fruit borders, watering	219	Pea, James's Prolific Marrow	40
" maiden tree	117	Fruit-room	80, 81	Pigeon, Magpie	373
" Lady Heuniker	82	Fumigator Carter's	330	Pigeon box	455
Aristolochia galeata	276	Gelasma azurea	438	Pigeon nest and feeding-pass	391
Arundel Castle Keep and Flower Garden	13	Glaucolus corm, curious formation	230	Pine-urn, an American	434, 435
Asilus californiformis	66	Glazing without putty	333, 437, 507	Pimpla	237
Ballarat Botanic Garden	60	Gooseberry training	810	Pterone humilis	165
Bees, nest and cells of Humble	8, 9	Greenhouse, span-roof	867	Potato Beetle, Colorado	261
Bienheim	276	Heating, arrangement of pipes	94	Poultry, anatomy of head	891
Boiler, Climax	419	Hea's anatomy	872	" plumage	411
Bombus major	57	Holland House	85	Poultry and Pheasant feeder, the Spencer	362
Bouquet-holder improved	28	Houdan cock	454	Poultry marker	107
Bouvardia aurantiaca	4	" Dutch garden	37	Puccinia malvacearum	427
Brachinus expulsores	45	" head	454	Puccinia malvacearum	416
Brick, ornamental	151	" hen	476	Raidisseur, Marmora	224
Bristol (East and West of England) Show Ground	477	" head	476	" another form	221
Burying Beetles	186	Hybrid between Dominique cock and Guinea hen	413	Roses, propagating, planting, and pruning	162, 163
Burley-on-the-Hill	469	Kitchen garden, forms of	121	Sawing-off branches of trees	361
" Mrs. Finch's Flower Garden	471	" laying out walls	152, 153	Scutellaria macrantha	90
Cacti, Mexican	83	Knowsley, cottage at	491	Seed drill	173
Calosoma sycophanta	465	Lawn, laying-out	260	Sensitive Plant	491
Campanula corollata	52	Lawn mower, Green's Guinea	77	Sesia apiformis	291
Campsidium filicifolium	566	Lilies, group of white	187	Silpha quadripunctata	186
Carabus auratus	464	Lilium Szovitsianum	518	Stoke Rochford Flower Garden	407
" violaceus	464	Lycena Egon	546	Syncope Hall Flower Garden	223
Cemetery at West Laurel Hill	313	" Corydon	543	Syncope autumnalis	35
Cephalotus follicularis	237	Maple tree at Boldre	257	Tel is for pot plants	11
Charocampa Elpenor, moth, larva, and pupa	291	Meconopsis Wallisii	468	Tritonia aorea	200
Chapel Oak of Allonville	349	Mentone, Dr. Bennet's garden	241	Tsuga Tsuga	169, 161
Chatworth	126, 119	Microperma bartonioides	861	Tusser's family arms	330
Chelidonium brumata	506	Mimosa pudica	491	" birthplace	331
Chiswick House gardens	467	Mitrasia coccinea	418	Vanda cernua	123
Cinchona bark collecting	418	Monte-Carlo, view from Casino grounds	169	Ventilation, top	273
Collosia multicolor	510	Normanton Hall	512	Vinery	215
Crochocampa processionea	423	" view in grounds	513	Vines, training on roof	164
Cossus ligniperda	554	Necrophorus germanicus	186	Wall covers	567
Crève-Cœur cock	497	" vespillo	186	Walnut tree	294
" comb	497			West Dereham Church	426
				Xponomcuta padella	506

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 1—7, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
1	TH	CIRCUMCISION.	43.0	30.8	36.6	12	8	59	4	26	2	15	7	13	3	53	1
2	F	Micheline died, 1737.	41.9	28.9	35.4	17	8	8	0	4	20	3	20	8	0	4	21
3	S		42.6	28.6	35.4	17	8	8	1	4	26	4	11	9	15	4	29
4	SUN	2 SUNDAY AFTER CHRISTMAS.	42.2	27.3	34.4	16	8	8	3	4	39	5	46	9	16	5	16
5	M		41.4	28.6	34.8	14	8	8	4	4	54	6	12	10	17	5	43
6	Tu	EPIPHANY. OLD CHRISTMAS DAY.	41.1	29.1	35.4	17	7	8	5	4	7	8	31	10	18	6	9
7	W	Twilight ends 6.11 P.M.	41.7	30.1	35.5	14	7	8	6	4	18	9	46	10	19	6	35

From observations taken near London during forty-three years, the average day temperature of the week is 42.0°; and its night temperature 29.0°. The greatest heat was 57°, on the 3rd, 1860; and the lowest cold 11° below zero, on the 4th, 1867. The greatest fall of rain was 0.86 inch.

## THE NEW YEAR AND "OUR JOURNAL."

**T**HIS first number of "our Journal" for the year 1874 will bear upon its first page the date of the first day of that year. The two will begin together hand in hand like two little children, the new year and "our Journal" hand in hand from the first day of the new year. On this day, the year being so very new, a great many people will begin their letters with a wrong date; many a D for December will be blotted over, and turned into a J for January. A great many threes will be turned into fours; for, somehow, 1874 won't come to the fingers' ends naturally; just as a very new bride, forgetting that after signing her name in the vestry of the old church at the old home, she has done with it for ever, will make a like mistake and write, or begin to write, her former name. But after a short while new year and new bride will come naturally to their places. Thus this year will be spoken of without the prefix "new," and "bride" will altogether be gone, and that best name of all, "wife," reign permanently. But however we may make a mistake for awhile in a word or a figure, yet none of us, save very new readers, will make a mistake in the name of JOURNAL OF HORTICULTURE, for it is getting an old periodical now; it has passed its coming of age, and even its twenty fifth birthday—it is more than a quarter of a century old, and like a man about that age, is better than in former years. Take, for instance, the engravings, which are twice in number to what they were some years ago, and, I make bold to say, twice as good. Among the engravings that gave me particular pleasure were those of Tortworth Court, and Beckett House, and Westonbirt, and Longleat, some well known to me, and the spirit and character of the places "L. B." has caught and well produced. Let her—for "L. B." is a "her"—go on cheerily in her work, and prove that woman's dainty fingers can be useful fingers, and woman's little light hand be a breadwinner in an art in which man had once no competitor. Let women take courage, and without noisy women's-rights meetings, they may find work, and excel in work, and be something besides cooks and governesses.

Nor let me speak only of the engravings of the past year. When old writers like old soldiers fall, I see others step into their places, and, if their hands lack all the cunning of the old ones, they have a freshness all their own. And in speaking of old soldiers falling, I feel I must speak of that special one, that excellent writer and excellent man whom we have this year lost—I mean, of course, Robert Fish. Much at the time of his decease was written of him, and nicely written, and feelingly written, in these pages of ours, but I must add yet a little more. Robert Fish knew what to say, and he knew also how to say it: these are rare gifts, or rather a kind of double gift. The man of deep knowledge so often lacks the power of pleasantly expressing his ideas, while the man who has a happy style has frequently but a small

store from which to draw. But not so Robert Fish: the wine was rich in body, and it came also bright-coloured and sparkling to the lip. Let me recommend a close perusal of Mr. Fish's papers to young contributors. For twelve years I read him closely, scarcely ever omitting an article, the style was so good, the words so wise. Let me ask younger writers to turn to Mr. Fish's charming contribution to our Christmas number of 1866; or if they have not that, to the piece which opened our volume for 1873. The latter he most kindly wrote in my place, for a terrible grief had caused my pen to drop from my hand, and his private letter to me on that occasion is among my veriest treasured letters. I knew Mr. Fish personally, and I am so glad I did. Some writers who please, do not please when seen in the flesh; they are men of the pen only, they feel all right, but are the slaves of an unhappy manner. Not one of these was Robert Fish—a little robin redbreast of a man (ah! how the little men do the work of the world with brain as well as body—e.g., England's Lord Russell, and France's M. Thiers) with a cheery eye and nice address, and a shake of the hand in the pressure of which you felt his heart. (Oh! how I hate a hand just coldly put into one's own—a fin rather than a hand.) But there was one point which in the many notices of Mr. Fish—viz., his eloquence of tongue, was not mentioned. I once heard him speak in public, and he was, to my surprise, an orator; his language choice, his tongue fluent. Gardeners, you have reason to be proud of Robert Fish! I scarcely ever knew a man of so complete a character, personally, literary, oratorically. He is gone, we have all of "our Journal" lost a friend. Young gardeners with now greater educational advantages than he had, press on in your profession, honour it, and bring honour on it. Be enthusiastic as to your profession, feel that none is its equal—that is what each man in every profession should feel if he wishes to excel in it. You gardeners, remember that you can boast of some living, whom I know, who have brought honour on old Adam's trade, and among them none wiser, kinder, abler than was Robert Fish. Peace to his memory. I write of him even now months after his decease with dimmed eyes. Follow him, men of the spade, read his writings, and each say, "I too will be what he was in character, if I cannot in ability."

In looking through the numbers of the past year I notice some indications of a revival of the love of old-fashioned ways and old-fashioned flowers. Thus there was an article, given the place of honour by our Editors, on avenues by one of our rising writers. It has often struck me that this artistic way of planting trees is not sufficiently followed now-a-days; perhaps because like "Pears, they are planted for our heirs" chiefly, and this is a hurrying, railway, rapid-developing age that does not like to wait; and money's worth is wanted for the money, and paid down at once, too. Belts of wood are imposing, massive clumps tell well. Openings cut in woods to let in views show taste and add to the landscape, and please as much as the atmospheric distances in Claude's pictures; but the old-fashioned avenue has its distinct charms, it

speaks of man's triumph over Nature's luxuriant wildness, and of mighty trees made to stand side by side, and each show forth the other's mightiness. These to whom the Long Walk at Windsor is familiar, and still more the avenues of Bushy Park seen in May time when the Horse Chestnuts are in bloom, and the shorter but telling avenues at Hampton Court are known, will fully bear me out in the good taste displayed in a well-planted avenue, and the permanent pleasure which arises from such a planting of trees. There must have been at one time almost a rage for such an arboreal arrangement, for, if I mistake not, the majority of avenues are of about the same date. Cowper thus speaks of the avenue—

"Not distant far a length of colonnade  
Invites us. Monument of ancient taste,  
Now scorned, but worthy of a better fate.  
Our fathers knew the value of a screen  
From sultry suns; and in their shaded walks  
And long-protracted bowers enjoyed at noon  
The gloom and coolness of declining day."

And then he thanks his neighbour, the squire of Weston Underwood, who, he says,

"Spare me yet  
These Chestnuts, ranged in corresponding lines;  
And though himself so polished, still relieves  
The obsolete prolixity of shade."

Pointing, I fancy, to many landowners of the day, who, influenced by "Capability Brown," scarcely left three trees in a line from Land's End to the Tweed: hence the poet says plaintively—

"Ye fallen avenues! once more I mourn  
Your fate unmerited, once more rejoice  
That yet a remnant of your race survives.  
How airy and how light the graceful arch,  
Yet awful as the consecrated roof  
Re-echoing pious anthems! while beneath,  
The chequer'd earth seems restless as a flood  
Brushed by the wind. So sportive is the light  
Shot through the boughs, it dances as they dance,  
Shadow and sunshine intermingling quick,  
And darkening and enlightening, as the leaves  
Play wanton every moment, every spot."

Nor must it be forgotten that the avenue was the great teacher of the Gothic architect. Gothic arches are but lofty trees of stone. Walk down the aisles of a cathedral—there you have avenues. The thoughtful architect took his hint from the lofty Elms, whose branches ran into each other. Gothic architecture, because imitated from Nature, is more beautiful than Grecian or Roman, and more suitable to become, as it has become, Christian architecture. We in a Gothic edifice seem to be worshipping the Creator in a place resembling His creation, for above is "the branching roof." Many a country church is tree-like,

"With pillars crowded, and the roof upheld  
By naked rafters intricately crossed,  
Like leafless underboughs in some thick wood,  
All withered by the depth of shade above."

With the revival of Gothic (Christian) architecture in this century the planting of trees in avenues may well and suitably be revived.

A lingering love, never wholly eradicated, for old-fashioned border flowers has cropped-up and strengthened. I agree with the gay bedders for beds; we in England have over-much green, and want striking colours for contrast and variety; but I grudge that borders should have been invaded, and the term "ribbon border" ever been invented. It is now positively difficult to procure—at least I find it to be so—the border plants proper. Therefore never did I read (and I am sure many others) any articles with greater interest than those by "PHILANTHOS" and my old friend Mr. Robson on Primroses and Polyanthus, which the former truly says were "long ago the delights of almost every garden." Then with the interesting letterpress came also in its midst those admirable engravings of the "Hose-in-Hose," "Pantaloon," "Galligaskins," and the rest—flowers which I have not seen for years. These papers are good signs, and I hope the cultivation of these and like flowers may be revived ere too late, for even in cottage gardens near me they are gone. "Tost them years ago," is the answer I get, for from mansion garden and rectory garden the bedders have travelled down to farm-house garden, to cottage garden. I, on behalf of hundreds of readers, thank all the writers on those interesting and sadly-neglected flowers.

Leaving now the flower department of "our Journal," I turn to that more particularly my own—my own from my scribbling in it for eleven years—the poultry and Pigeon department. The great event of the year is, no doubt, the pub-

lication of our Mr. Wright's grand work, a work which even in parts has had a marked influence on the poultry world in England and America. The other great influence, if I may so speak, is the great national Show at the Crystal Palace. Provincial shows are admirable and interesting, and the things for the provinces, and reflect the peculiarities of each part of the country; but everything national must be connected with the metropolis of the nation; and how fortunate we are in possessing—whether for fowls, Pigeons, dogs, Canaries, or cats—such an exhibition-room as the Crystal Palace. To exhibit the Game Bantams just over the Game fowls, and the eye thus being able to see the two at one and the same time, was a thought worthy of a genius.

Little need be said about the poultry, but I would just say this, that at any rate quite enough has been written about Malays, which are neither ornamental nor useful, and only interesting as our first-imported Asiatic fowls; while too little has been said of the Polish of all varieties, which, though they may not be a useful variety, are among the most ornamental at a show, and may be kept in an outhouse or small wired enclosure.

Of Pigeons I gladly chronicle that they are more admired than ever, more numerous than ever, and new fanciers are everywhere rising up. The Tumbler proper, the Flying Tumbler, had a class to himself at the Palace Show, and deserved it. Short-faced Balds and Beards also deserve encouragement, for ne Pigeons are prettier or more distinctly marked. The Dragoons are also everywhere improved, and do not look like young Carriers.

In turning to Canaries, in which I am always interested though not a breeder now, the event of the past year is the discovery of the method of colouring by food. The defence by chemical analysis of the honesty of the method was searching, and the exhibitors enjoyed the triumphs of honest Englishmen. But yet a word of praise to Messrs. Bemrose & Orme for the revealing of the secret, which will be a benefit to all Canary fanciers, and even to all visitors at shows.

Speaking of Canaries, there is a touching story told of Sir Joshua Reynolds, the first of the English school of portrait painters, when he became blind. He had always been deaf, but that matters but little, for there is so much more worth seeing in the world than worth hearing. If the eyesight be given and preserved, deafness is little felt. But the time came when the great painter's eyes grew dim indeed. Well, one day he was found by a friend wandering round the rails of his house in Leicester Square (No. 47; mark the number, lovers of painting and painters), seeking for a pet Canary of his that had strayed. He never could have heard the little bird's song, but he had formerly seen it. It was an old friend, and he wished it to be still his own, his pet. Scorn not little pets. The man who drew Mrs. Siddons as the tragic muse, and wrote the great lectures on painting, and was the Royal Academy's first President, yet loved a little Canary. How tenderly are pets loved! how diligently cared for! But, perhaps, there is no instance on record of a whole city's people loving and tending their pets as that of the citizens and the Pigeons of Venice. A daughter of mine the other day was in the Great Square of St. Mark, at two o'clock, when the thousands of Pigeons are fed. Down they came at the sound of the bell, the city was alive with wings—from every quarter they came. A little Italian boy gave the young lady a packet of Maize; the Pigeons saw the act, and so tame and confiding are they, that my daughter's hands, arms, and shoulders were covered by the pretty birds. Oh! ladies who frequent Hurlingham Pigeon shooting, would you not look prettier—I appeal to your vanity, I will not try a higher feeling—covered by confiding happy Pigeons, than enjoying dying, bleeding, broken-winged, legless Pigeons?

But I must conclude. I know how "our Journal" tends to foster an innocent love for innocent things—I know the resources that a garden affords to those whose duties confine them much to one spot. Thus, a master of a Union, a winner of many prizes each year at a horticultural show, said to me, looking up from the pages of "our Journal" (he studies them weekly), "This place without my garden would be a cage." With it as a resource he lives on happily.

There is one other name I feel I must mention before my pen stops, it is that of Mr. Hewitt. "He who," as Mr. Wright truly says, "has devoted years of his life gratuitously to aiding, by his vast experience and knowledge in awarding prizes, the general improvement of poultry; he is among those who have done a good work for their country." Every reader of this Journal, whatever part he may specially read, yet well knows

Mr. Hewitt at least by name, but all do not know that his health is not now what all his friends (and we are all of us his friends) wish it to be, and also that he has had sorrow. I therefore wish editors, sub-editor, writers, readers in all parts a happy new year, and also add to that wish that the coming year may be a happier and healthier one to Mr. Hewitt.—WILTSHIRE RECTOR.

### WAR OF THE ROSE STOCKS.

I AM glad of the war of the Roses—not the York-and-Lancaster this time, but Briar v. Manetti. I have been expecting a vigorous Briareus to attack my article on Manetti, but no sign of a powerful onslaught has yet been made, except it be the statement of the length of shoot that has or can be made from a Rose on a Briar stock in one season; but as I have myself measured Général Jacqueminot 9 feet to 11 feet 6 inches in one season, and Gloire de Dijon on Manetti 17 feet, I do not think 13 feet 6 inches on the Briar quite such a poser. I question much whether it was on a standard, and if it was on a standard it would have nearly all to come away for the sake of the symmetry of the head. Again I say, Where there is a heavy clay or an unctuous tenacious loam, stick to the Briar, but then not as a standard, but budded on the seedling; or when a man does not care for a bedded-out Rose garden, and does not mind about an untidy quarter of Roses, and wishes to go in for amateur Rose-showing, let him each year bud on the Briar as many as he has room for, and dispose of them as best he may after the season.

Mr. Baker says he agrees with me in the main, but would not mulch. I do not mean by mulching putting on heavy wet manure, but warm littery manure, leaving air to the roots and stems, but still affording great protection from frost.

If I might venture to answer Mr. Camm's queries about Tea Roses for exhibition stands, I would say persons too often put in Tea Roses, not because they are really first-rate, but to diversify a stand. A really fine Tea Rose or Noisette, such as *Maréchal Niel*, *Souvenir d'un Ami*, *Madame Willermoz*, and others not only diversify but beautify a stand; but a second-rate Tea Rose is not better than a second-rate Hybrid Perpetual—certainly not so good as a first-rate Hybrid Perpetual. Tea Roses protected against a wall too often come in before the rest of the Hybrid Perpetuals, and then inferior blooms on side shoots are put into stands because they are favourites with the exhibitor, and because he thinks the judges will make allowances for its being a Tea; but they too often hang their heads, and appear as if they were ashamed of looking the judges in the face. Choose the best, the freshest, and most perfect-shaped Roses you have to put into your stands, never minding whether they are all Hybrid Perpetuals or not; but if you have a really good Tea by all means let it come to the front. Some rosarians have a *penchant* for flat Roses; some ignore the merits of *La France* because of a loose petal, and praise a Rose of the shape of an inverted Mushroom; some like dark Roses or dull-coloured Roses like *Felix Genero*, because they weather well; but an indulgence of these fancies on an exhibition table would seriously militate against the chance of a prize.

It is now three or four years since I was able to avail myself of the request to judge at the Crystal Palace. Saturdays for parsons who live two hundred miles away are not good days for Rose shows; but I have a very lively recollection of very good and pleasant dinners, under the auspices of the worthy Superintendent, Mr. Wilkinson; and I feel sure than any hint for a breakfast and pleasant meeting for rosarians would be quickly carried out, as one especial feature I have always noticed at the Crystal Palace is their readiness to accommodate the public, and to accede to any proper request. So I hope Mr. Farren will succeed in satisfying his wants, both of a good breakfast and a good talk. Roses—to the front.—C. P. PEACH.

### HOW TO TREAT CAMELLIA BUDS AND BLOOMS.

At this time of the year there is generally a great demand for Camellia buds and blooms, and unless there are houses containing large trees planted-out it is difficult to obtain enough without overtaxing the few trees that can be kept in a miscellaneous collection of hardwooded plants. It is not every person who has such housefuls as are to be found at Bicton, Sion, Chatsworth, or the Exeter Nurseries—I have driven-out cartloads from the latter. We not only, by cutting a bloom with the wood to it, run a risk of destroying the means of producing a crop of flowers in the following season,

but also of reducing the already-too-small tree, and then there is the loss, in most instances, of the unopened bud that will in the majority of cases be situated near, and which would be most acceptable by-and-by. I think, therefore, your lady readers who have but a plant or two will thank me for giving them a hint on this subject.

Now, the remedy I adopt is a great advantage to the tree, and not less so to the person for whom the bloom is intended. It is simply to pull-off the bud or open bloom gently from the plant, leaving the wood and an open bud for further service, and place it on wire. The bloom answers the same purpose without the wood as with it—nay, even better, for it is not liable to be knocked-off, as is often the case when left on the wood. It can at the same time be better arranged to suit the button-hole, the hair, or in hand bouquets. Of course, the wood is necessary when blooms are employed for specimen glasses or stands for table decoration; even then it is a wise plan to thrust a few wires through the base of the flower, thus keeping it together for some days longer than it would otherwise do.

I take the buds or open blooms without wood, and thrust about four or five bouquet wires into the base of the petals, place the blooms at the required distance—this is easily done by having the wires of different lengths—then twist the wires all together close at the base of the flower. I have then two leaves of the Camellia also placed each on a wire, and neatly put one on each side of the flower, with a good moderate-sized frond of Fern at the back, and with just a small bit under the front of it so as to hang down a little carelessly. Now gently twist the wires together so as to form a stem about 2 inches long. The work is then done. The bloom will last a night well, and will give greater satisfaction to the wearer, and, of course, to the gardener (nothing exasperates him more than having to cut too much at his Camellias), for he knows that “his” plants are none the worse of the blooms being removed.—J. T., *Maesgwynne*.

### STRAWBERRY FORCING.

I SUPPOSE we have all heard of the famous culinary recipe that commences with “First catch your hare.” No really good cook would attempt to make hare soup without at least a small portion of that animal to flavour it with. To beginners in forcing I would say, First have properly prepared plants. It is useless to attempt to force fruit on a plant that has not already perfected its arrangements to bring forth flowers. The flowers must be there in embryo and ready to burst forth when the necessary heat is applied; the plants must also be ripened to a certain extent. By the number of failures we read and hear of year after year it would seem that this is not thoroughly understood, because Strawberries are certainly not more difficult to force than many other fruits when once we have the plants and suitable accommodation.

Whatever the size of the pots used, they should by the middle of September at the latest be so full of roots, that on turning a plant out scarcely a particle of soil can be seen amongst them. This accomplished, all the rest is easy. The pots should be kept on a hard substance to prevent rooting through—mine are placed on inverted 60-pots. The plants will perfect their crowns and ripen in spite of sunless weather and autumn rains, and by the end of November most of the outside leaves will have changed colour, and all will appear almost dormant.

Those who have plants of this description may commence at any time; and those who have nothing but soft green leaves, whatever size their plants may be, had better throw them away and have some clean 7-inch pots and stiff loam, such as *Melons* delight in, ready next June, and I will then tell them how to start afresh. It is useless to attempt to do anything with unripe plants; nearly all the art of forcing lies in preparing the plants beforehand. This applies to flowering plants generally as well as to those grown for their fruit.

To have good fruit ripe by the first or second week of April the plants should be placed in a little warmth not later than the first week of January. To plunge them in a bed of warm leaves and cover with a frame, is a good old plan that is not yet beaten for the earliest batch or two, giving air whenever the temperature can be kept up to 48° or 50°, removing the lights altogether during mild weather, and covering a little during frosty nights. In a mild season this treatment may be continued till the crowns fairly begin to open, when the plants should be removed to a light house or pit where a temperature

of 50° to 55° can be maintained, with a little air constantly. This temperature should never be exceeded by artificial means—it may rise higher by sun heat—till the most forward flowers are perfectly open, when the latest ones may be picked carefully off or cut with Grape-scissors, leaving not more than eight or ten of the largest and most forward, and the temperature may be increased considerably. When the fruit has fairly started swelling it will bear with impunity the heat of a Melon or Pine house, but must be kept cooler at the first sign of colouring; and finally after it is coloured must be kept quite cold and have abundance of air for a few days.

If the treatment I have attempted to describe has been carried out, and watering properly attended to, the fruit will be equal in flavour to that ripened out of doors in June.

The principal points to attend to are—To force very gently till the flowers are perfectly formed; to attend strictly to watering—once let the plants get really dry, the fruit will never be good for anything; to keep the plants always in a light situation with continuous ventilation, not necessarily close to the glass as many suppose—they may be 60 feet from it provided there is nothing to obstruct the light. Some people seem to have an idea that there is something about glass for plants to feed on. Perhaps it is the condensed steam. We are continually being told to keep the plants close to the glass: it may be necessary to do so in those old-fashioned houses, now happily fast disappearing, where there is a greater breadth of timber than glass used in the construction of the roof; but in the modern light-built houses it is preferable to keep the plants at a little distance from the glass, where the atmospheric changes are not so violent. Lastly, it is of the greatest importance to finish the ripening process in a cool place with abundance of air.

The sorts I depend on for in-door work are Keens' Seedling and British Queen. If Strawberries are wanted before the end of March, Black Prince is the best for the purpose; but they will only be Strawberries in appearance, not in flavour.—WM. TAYLOR.

### THE WEATHER.

No one can remember a milder December; it seems, as Shakspeare describes a similar season, as if Time "had found some months asleep and leapt them over." In Holland Park, Kensington, the rooks are repairing their nests; we hope they will not marry, for an inclement season will soon be here, and the description will apply—

"Then into their nests they paddled,  
Themselves were chilled, their eggs were addled,  
And they parted without the least regret  
Except that they had ever met."

From Malton in Yorkshire we were informed on the 21st that only on three days of the month any rain at all is recorded—0.04, 0.03, 0.04, or a total of 0.11 inch in twenty-one days. The thermometer twice reached 57°, varying 43° in three days—i.e., from 14° on grass on the night of 13th, to 57° at 4 feet above ground on the morning of the 16th. The barometer was never lower than 30.35 inches between the 1st and 15th, and a gale of unprecedented pressure occurred in Mid-Yorkshire—i.e., Sheffield, Leeds, &c. Not one flake of snow has been seen—a thing our informant never remembered in Yorkshire, as generally they have snow before October is out. They have had hard white frosts, but the Wheat is looking wonderfully well. They were fifteen days in succession without rain in November, and sixteen in December.

At Linton Park, near Maidstone, the report on December 22nd was—"We have remarkably mild weather in the country. Some of the Geraniums in the vases are not yet killed by the frost, and the roads are next to being dusty."

At Torquay on Christmas-eve the thermometer was at 54° in the shade. No wonder that the swallows still linger about the southern shore, or that Roses, Carnations, and Stocks still perfume the air.

### FLOWERS FOR OUR BORDERS.—No. 23.

BOUVARDIA AURANTIACA. — ORANGE-FLOWERED BOUVARDIA.

The species of *Bouvardia* are not very numerous; the oldest and best known is the *B. triphylla*, which has been cultivated in this country for nearly fifty years. The specific name of this species would naturally lead the inexperienced botanist to suppose that the triphyllous arrangement of its leaves was peculiar to it; but it is by no means distinctive, the majority

of the other species, including that now figured, having foliage of the same character.

Of the species just referred to there are several varieties—pubescens, glabra, and splendens; though this last must not be confounded with the true splendens, which is a distinct species, and, in our opinion, preferable to either triphylla or its varieties. Other very desirable species are angustifolia, versicolor, Jacquini, Cavanillesii, and leiantha, all with scarlet or red blossoms; flava, with yellow; and longiflora, with white flowers. Leiantha and longiflora are natives of Guatemala; most of the other species have been received from Mexico. They are all of comparatively dwarf habit; in suitable soil, however, plants bedded-out in spring will, by the end of the autumn, make shoots from 2 to 3 feet long, with numerous lateral branches. Where it is thought desirable to restrict the growth of the shoots they may be stopped, which



*Bouvardia aurantiaca.*

will induce a more compact habit; but this will rarely be necessary. They are readily increased by cuttings about three joints long, which may be taken off at any period during the summer, and inserted in light sandy soil. A little bottom heat will materially shorten the time required for the emission of rootlets; but we have struck them even in August without any such aid. They are rather liable to damp-off, unless the interior of the glass be wiped regularly each day; and as soon as they appear rooted the glass should be removed at night.

*Triphylla* does not root so readily from cuttings as *splendens* and some others; that, as well as most of the species, are sometimes increased by short pieces of the roots in spring, which should be planted in pots of light soil, with the ends of the cuttings exposed above the surface. If placed in a good Cucumber frame they will soon make nice plants. As, however, most of the other species may be easily increased by cuttings of the young shoots, we venture to recommend them in preference to *triphylla*. Any of them may be purchased for a shilling, or even less in some places. They will flourish most in the same description of soil as that employed for Verbenas and other bedding plants; but with proper precautions against drought in summer, they will succeed in most soils, except those of a stiff clayey kind.

As window plants they deserve especial attention. The abundance of their flowers and their neat habit render them in our opinion extremely desirable. During winter they require

but little attention, as most of them lose their foliage, and may be kept dormant, like the Fuchsia, Lemon-scented Verbena, and other window plants. In spring they should be pruned rather closely and repotted in fresh soil, using a pot suited to the size of the plant.

Although they have no known economical uses, the order to which they belong is one of the most important in the vegetable kingdom; furnishing the various species of Cinchona or Jesuit's Bark, from which the invaluable quinine is prepared; the Ipecacuanha; and the Coffee plant, whose produce, if not more useful, is at all events less unpalatable and more generally welcomed.

The genus *Bouvardia* was named in honour of Dr. Charles Bouvard, Curator of the Paris Botanic Garden.

Since the original publication of these notes, not only the *Bouvardia aurantiaca*, but also most of the other species and varieties named above, have been superseded by the introduction of several hybrid forms with much larger flowers, raised by the late Mr. Parsons, of Brighton, between the white *B. longiflora* and *B. leiantha*, and cultivated under the names of *B. Hogarth*, *B. Oriana*, &c. These in their turn are likely to be pushed aside by several more recent introductions of the Messrs. Henderson, of the Wellington Nursery, the most remarkable of which, *B. Humboldtii corymbiflora* and *B. jasmoides longipetala*, deserve especial mention for the large size of their individual blossoms and the profusion with which they are produced. Invaluable as they may prove for the conservatory and greenhouse, they are, however, probably more delicate than the earlier hybrids of Parsons', which are better suited for the open air, or for the window of the amateur. The American variety offered under the names of *B. Vreelandi* and *B. Davisoni* is but a sport from the *B. Hogarth*, and although useful as a pot plant, does not retain the whiteness of its flowers when planted out.—(*W. Thompson's English Flower Garden*, Revised by the Author.)

## THE ELECTION, PROTECTION, AND STOCKS OF ROSES.

THERE are two bores described by Addison in "The Spectator," the button-hole bore and the periodical scribbler. The former is described as catching hold of your button-hole, and proving to a demonstration that two and two make four, and that as long as the world lasts seven will always be more than six. The latter scribbles periodically. I suppose I shall illustrate both; but my apology must be that it is a dull time of the year, and that the readers of "our Journal" like to hear something concerning Roses.

1.—*The Election of Roses*.—Though kindly asked by Mr. Hinton (to whom, with electors, thanks) to contribute, I was unable at that time to do so, because I did not know the true dates of the Roses. Having seen the Roses named, I can now say a few words. I believe Edouard Morren was a Rose of 1868, and I think Velours Pourpre must be a much older Rose. Of the Roses named, these I believe to be good—Edouard Morren, Countess of Oxford, Louis Van Houtte on a seedling Briar, Marquise de Castellane, Baroness Uxull, Abbé Brametel, Baron de Bonstetten, Ferdinand de Lesseps like Maurice Bernardin, Madame George Schwartz, Etienne Levet, and Madame Hyppolyte Jamain, a nice Tea Rose. At the Dorset Nurseries Etienne Levet was said to be the best novelty, and Félicien David next best. I shall know more of these and others next year, as I have them on strong stocks. Judgment of plants under glass, and on weak or unsuitable stocks, can be only approximation, and may be worthless. I speak slowly, because it is a serious matter to many persons of small fortune to do otherwise.

Some of the very best Roses of late years, and such as I can confidently recommend, are Felix Genero, Marie Rady, Edouard Morren, Baroness Rothchild, Clémence Raoux, Thyra Hammerick, and the two Tea Roses Madame Margottin and Madame Hyppolyte Jamain, and I think I should add Marie Sisley. Mine, however, is not a "Tea" situation. I doubt if in that family Devonensis and Souvenir d'Elise Varden have ever yet been beaten. These Roses are good growers, and passed a good degree here last year—namely, Vicomtesse de Vézins, Monsieur Woolfield, and Monsieur Journeaux (Mareat). Captain Lamure, Henri Pages, and Monsieur Cordier I have cast out as worthless here.

2.—*New Roses*.—A prophecy is not a fulfilment. I will, however, venture one, and have bought, or shall yet buy, the Roses I name. I think, from what I read and hear, these

will be good, or some of them—Firebrand, Reynolds Hole, Claude Levet, Félicien David, Madame Lacharme, and Pierre Seletzky. The last is a good grower, and, though budded in June last year, it made 18 inches of good wood. Mr. Cant speaks of it as a capital Rose. I shall order the first two; the others are here.

3.—*Winter Protection*.—I bought a load of fern for 10s., including carriage. With this and a little earth over the fern I shall make my 2100 Roses safe at the roots and over the point of union. I see Mr. Prince recommends drawing the earth (as with Potatoes) over the roots till the severity of the winter is over. Some winters there is need of little or no protection, but when zero comes in earnest, then woe be to unprotected Roses. There is such a thing as the "beginning of the end." Roses injured by frost or other things may not die at once, but they die eventually. Possessors of Roses, and rosarians, are often very different persons. One thousand Roses well looked after will give more satisfaction than five thousand Roses maltreated and haphazardly by reason of mere wealth, or supineness, or ignorance. Roses in the same family require different stocks, different soils, and different treatment altogether.

4.—*Stocks*.—I am much pleased with Roses on Mr. Prince's seedling Briars; they are masterpieces of propagation. They are the very stock for Louis Van Houtte. I have made a bed of fourteen of it. All the plants match. I shall run these fourteen on the Briar against twenty Baron Chaurand on Manetti. They are both in beds by themselves. Accumulation of the same colour is very effective.

I am truly glad to see so many speak-up for the Manetti stock. I remember the time when I was the only amateur who could say a good word for it. The faults were with the propagator and the planter. The failure of the Briar is often to be attributed to the bad quality of the Briar, to the planter and the pruner; they are not cut hard enough the first year, and are often planted too deeply.—W. F. RADCLIFFE.

## NOTES FROM MY GARDEN, 1873.—No. 1.

It is not given to everyone to have either the means or talent to produce such a volume as that of Mr. A. Smee, or to make "My Garden" a household word, but we may all of us to some degree carry out the principle which led to the writing and publishing of that book—viz., that our own personal experience is after all the truest guide we can offer to others. We speak then, not from hearsay but from practical knowledge; we can tell of successes or defeats, and encourage one another. And while—without incurring that bitter reproach of Montaigne's, that our highest enjoyment is in contemplating the misfortunes of others—a true gardener must rejoice at the successes of those who are following the same pursuits, and when he hears of their failures he comforts himself with the idea, "Well, it was not all my stupidity; I am not singular in my misfortune, and I must therefore try again." When, for instance, I stood mourning by my Roses over my ignominious defeat by the orange fungus, it was some little consolation to me that a rosarian so enthusiastic, so devoted, and so intelligent as my friend Mr. Camm had to confess to defeat also. I was not glad that he had suffered, but I felt, "Ah! then this is a common foe, and others besides myself have felt his power." I have thought, then, that a survey of one's doings during the past year might be of interest to some of your many readers, who will, it may be, take from the failures and successes of a brother gardener fresh hope for another year's work.

And in order that I may do this more effectually it will be well first to describe my garden. It has not the slightest pretensions to beauty. It would give my friend Mr. Peach an attack of indigestion, for bedding-out is at a discount in it; and when my friends and neighbours say, "Oh! you must have a beautiful garden!" I am constrained to say, "Not a bit of it. I had not the laying-out of my garden, and I never could understand on what principle it was laid out." Trees were planted anyhow, and at the bottom of the garden there used to be a pond—this has been filled-in with made earth. The other parts of the garden are of a rich blackish earth, somewhat light—too light, I fear, for Roses, but suiting most other flowers well. "Our village" we are fain to look upon as the *beau idéal* of an English village. We lie snugly nestled under the brow of a hill, but not at its base. There is a large flat place about two-thirds down the hill, and the ground drops away again for some considerable distance, so that while sheltered it is not low. Close by the church there are some of the most extra-

ordinary springs I have ever seen. They bubble-up from the chalk; and so great is their volume, that at 50 yards they make a current sufficient to turn a mill. In fact we are surrounded by springs. One rises in my garden, and I have, by means of what is called in these parts a "dip," a plentiful supply of water. I wish I could say it is of the best quality for gardening purposes, but as it rises in the chalk and is largely impregnated with it, it is of course hard, and is, I believe, very injurious to hardwooded plants. The one great want of my garden is a wall, but I am in good hope of being able to remedy this want before long; if so, it will be in a good aspect for fruit, facing about S.S.W. I have not much shade, and am now rather in a fix as to where I shall place my Auricula frames for the summer if my wall is built, for the shady place they now occupy will be demolished.

My glass is not very extensive. It consists of a span-roofed house about 20 feet by 10, and a smaller and lower house connected with it. The upper house is devoted to Azaleas, Camellias, Pelargoniums, &c.; the lower one is filled by a couple of Vines, and is used for many purposes—putting Camellias in after they have done blooming, Hyacinths when they are first taken out of the bed of leaves in which they are plunged, Chrysanthemums when they come into flower, &c. Besides this I have a five-light pit in which I winter Carnations and other plants, and afterwards grow a few Melons; a small house for blooming my Auriculas, and of course my Auricula frames; a large Cucumber frame; and for my winter or rather early spring salading a goodly length of Looker's Acme Protectors. Besides this I have about half an acre of light sandy soil in which I grow Potatoes, &c.

It will thus be seen that in many points I am not unfavourably situated. Soil is good except for Roses, climate excellent, and situation sheltered; my disadvantages being the hard nature of the water and want of shade. My gardener is a factotum—groom, gardener, &c., does what he is told, but is not enough of a gardener to fancy he knows more than his master. The flowers I especially cultivate are Hyacinths, Auriculas, Roses, Gladioli, Picotees and Carnations, and the Ranunculus; and as I can go on with them from March to October, I can always tell my friends, "Although I cannot show you a garden, I can, if you are a lover of flowers, always show you something worth looking at." Such is my garden, and of the results of my gardening during the past year I hope to tell in future papers. I am sorry to say there is one thing I take shame to myself for—my garden is not as tidy as it ought to be; but it is difficult, unless where you can afford plenty of labour, to keep a florist's garden in good order, and I must say in extenuation of myself that I never saw a garden in which weeds thrive so vigorously; the Sow Thistle, especially, is a most inveterate plague. I hope the garden is improving in this respect, but still it is not what it ought to be, or what I hope it ere long will be.—D., Deal.

### ALPINE PLANTS FOR WINTER BEDDING.

THE person who does not admire the great majority of hardy Alpine plants is not to be envied, for he debars himself from one of the most beautiful and interesting fields of study and observation which the flora of the world affords. That these, in most instances, tiny gems are coming more into notice, is certainly a matter for congratulation. Besides much else that can be said for a great many of them, it can be said that as the freshness and beauty of other hardy flowers decay, the freshness and charms of many of the Alpine plants are most conspicuous at the "fall of the leaf," and downwards through the winter. In whatever way they are arranged or grown, they are always objects of great beauty and interest. A well-arranged collection of Alpines, whether in pots, in a mixed border, or on a properly-constructed rockwork, is sure to give much interest to their votaries every day in the year. And these are common enough ways of cultivating and arranging them, and not a word can be said against them. But the use of these gems as carpeting or bedding plants is as yet comparatively rare. We are, however, convinced that their extreme attractiveness when so used—in groups and in quantities together—is not so well known and appreciated as it should be, and it only requires a few striking examples of Alpine bedding to commend this system of planting them to all lovers of winter gardening.

Indeed, it would seem that, from the way nature nurtures these lively plants, to cultivate them in large surfaces is the correct way of bringing out their striking beauty to perfection. Look, for instance, at a small morsel of some of the glaucous

Sedums and beautifully-incrusted Saxifrages, and then go and view the same plants by the square yard and see how very much more striking they look the one way as compared to the other. And this is exactly how they show themselves in their natural condition.

We would advise some of our readers who have a series or group of beds not very large in their gardens, to try the bedding of these gems after the following method. Suppose a circular bed rising somewhat cone or globe shaped to its centre. Let the first ring next the Box or grass edging be of *Sedum dasyphyllum*, the second ring of *Saxifraga rosularis*, the third of *Sempervivum californicum*, the fourth of *Arabis lucida variegata*, the fifth of *Saxifraga longifolia vera*, and the sixth or centre of the bed be *Saxifraga ceratophylla*. The rings formed of these should be a few inches in breadth; and seen in such breadth, and in concentric rings, their individual beauty is much more conspicuous than when mixed up in small patches with other plants. This is just one example of scores of combinations and plants that could be adopted. Then for carpeting, how charmingly beautiful is a carpet of *Sedum dasyphyllum* or *Sedum acre aureum*, or *Thymus tomentosus*, or *Saxifraga glabra*; *Veronica repens*, *Veronica alpestris*, *Pernaria glabra*, and many other beautiful dwarf spreading plants which will occur to the minds of all acquainted with Alpine flora, and which supply colours almost as varied as the summer bedding plants, and aspects of vegetation far more chaste and interesting! Take, for instance, a bed covered densely over with the quite brownish grey, edge it with *Saxifraga rosularis*, or *S. incrustata*, or even *Sedum acre aureum*, and dot the centre or body of the bed, at intervals of 8 or 9 inches, with large well-developed plants of that gem among Saxifrages, *S. longifolia vera*, and there will be produced a bed that must look charming the whole winter, or, indeed, the whole year. This is another combination only indicative of what can be done with the family of hardy Alpines in the way of grouping.

Then for dressing the surface of beds in which Hyacinths, Crocuses, Tulips, &c., are planted for early spring-flowering, what could excel as a beautiful carpeting, or what could show off bulbous flowers to more advantage, than the dwarf plants named above, and scores of others which might be mentioned? If these plants were difficult to propagate or keep, we would hesitate to recommend them for such a purpose; but most of them are so easily managed, and propagate so rapidly, that they can be grown in breadths in any out-of-the-way corner, and many of them lifted in great tufts and planted with the greatest ease, and without any check or injury to themselves. The low, dense-growing, surface-rooting Saxifrages, Sedums, and Veronics, Antennarias, &c., should be planted on a few inches of soil spread over a hard surface, and when required, as indicated above, late in autumn for planting and carpeting, they can be lifted without check in any size or shape of tufts required.

Beautiful as are *Alternantheras* and other plants used for summer carpeting, we do not consider it any disparagement to such plants to say that they are not nearly so interesting to an observant mind and eye as are these gems of beauteous hues and more beautiful construction, which, in addition to their beauty, are so hardy that they put on their best dress as other plants undress themselves of foliage and flowers. We hope our readers will be induced to try this style of grouping or planting Alpine plants, and that they will report on them in due time. It is a system of hardy gardening which only requires to be begun to become one of extreme interest and beauty.—D. THOMSON (in *The Gardener*).

### THE POTATO DISEASE—LORD CATHCART'S PRIZE.

It will be seen from the report of the Judges appointed to examine the essays on the Potato disease sent in in competition for the prize of £100 offered by Earl Cathcart, that this praiseworthy attempt to arrive at some settlement of the vexed question of the primary cause of the disease and the best means for its prevention, has ended in a failure, notwithstanding the fact that no fewer than ninety-four essays were sent in. The comments of the Judges will be found below. In introducing the report at a recent meeting of the Royal Agricultural Society, Mr. J. Dent Dent, M.P., said that the Committee had received the Report of the Judges who were appointed to award the prize offered by Earl Cathcart for the best essay on the Potato disease and its prevention, and after

considering the recommendations made in that Report, they begged to give notice that at the next Council they would ask for a grant of £100 to carry out the first recommendation of the Judges. They proposed that a special Committee, consisting of Lord Cathcart, Mr. Whitehead, Mr. Jabez Turner, Mr. Wakefield, Mr. Brandreth Gibbs, Mr. Brown Jones, Mr. Algernon Clarke, and Mr. Carruthers, be appointed to consider the suggestions 2 and 3; if they think it desirable, to draw out in detail a scheme for further investigation into the growth of the Potato and the incidence of the Potato disease, and to submit such scheme to the Council. The Committee further recommended that the Royal Agricultural Society of England should carry out its own independent investigation, but as far as possible in concert with the other national societies. This Report was adopted.—(*English Mechanic*.)

The following is the Report of the Judges on the competing essays:—The Judges appointed by the Council of the Royal Agricultural Society to examine the essays competing for the prize of £100, offered by Earl Cathcart, for the best essay on the Potato disease and its prevention, have the honour to report as follows:—They have examined ninety-four competing essays, and have carefully re-examined twenty-three selected from the total number. They are desirous of expressing their recognition of the great pains bestowed upon the preparation of some of these essays, especially in the collection of facts relating to the history of the Potato disease, and to the various theories that have been promulgated as to its cause and prevention. The theories most frequently advanced by the essayists, either for affirmation or contradiction, may be stated as follows:—

#### CAUSE.

1. Degeneration of the tuber.
2. Fungus on the tuber.
3. Wet weather, and generally superabundant moisture.
4. *Peronospora infestans* attacking the foliage.
5. Electricity.
6. Plethoric, or succulent, or diseased condition of the plant caused by the use of specific manures.

#### PREVENTION.

- Use of new sorts for planting.
- Steeping, or kiln-drying the tuber previous to planting.
- Use of lime as a manure.
- Clumping, tamping, or hillock-growing. Bending haulm downwards, clear of the tubers. Tying haulm upright to stakes, or growth of sorts having erect stalks.
- Dressing haulm with sulphur, chlorine, &c.
- Cutting off tops on appearance of disease.
- Sowing disease-proof sorts (either specially mentioned, or generally, as very early and very late vigorous sorts).
- Use of lightning-conductors of various modes of construction.
- Avoidance of the use of certain manures.

A number of other theories were also advanced, but it is not necessary to particularise them. Like the foregoing they have, probably without exception, been for many years familiar to those acquainted with the practice of Potato growers, or with the literature of the subject. Amongst the ninety-four essays abundant evidence may be collected both in support and in contradiction of any of the foregoing theories; and it is especially noticeable that the essayists generally consider it sufficient to assign a cause and a mode of prevention of the Potato disease, without giving any scientifically accurate theory of their proposed remedy, or sufficient experimental proof of the accuracy of their statements. The Judges are, therefore, unable to admit that any essayist has established the truth of this theory, particularly as the first condition attached to this offer of the prize is, that "all information contained in prize essays shall be founded on experience or observation."

Like the theories of the cause of the disease, the practical suggestions made with a view to its prevention do not go beyond those with which agriculturists and horticulturists were previously familiar; and, as regards the botanical part of the subject, it must be confessed that all the essayists appear to be in arrears of the present condition of scientific knowledge.

The Judges have, therefore, but with much regret, come to the conclusion that, in accordance with one of the conditions\* on which the prize was offered, they must recommend the Council not to award it to the writer of any one of the essays that have come before them.

The Judges have authority to say that Lord Cathcart hopes the Council will apply the amount of his intended prize in

\* The Judges were not bound to award a prize, unless they considered one of the essays deserving of it.

any manner that in the interest of agriculture may seem most advantageous.

Power having been given to the Judges to report as to the advisability of a grant being made for further investigations into the incidence and prevention of the Potato disease, they have carefully considered this question. They are much impressed with the national importance as well as with the difficulties of the subject. Therefore, while considering that the Society might, and probably would, confer a great benefit on the community by inaugurating a sufficiently extensive inquiry, they feel it their duty, before recommending a course of proceeding, to especially call the attention of the Council to the fact that no reliable results can be expected unless experiments are made simultaneously at many different places, and continued for many years in succession.

Presuming that the Council is willing to grant the funds necessary for such an investigation, the Judges have drawn up a scheme, which they have based on the following facts:—(1), The natural history of the Potato fungus, from the time it attacks the foliage until the Potatoes are harvested, is now well known; but the history of the fungus from the Potato harvest until its re-appearance the following year is at present entirely unknown, and, therefore, offers a suitable field for investigation. (2), The Potato fungus does not usually attack the foliage of the Potato until an advanced period in the growth of the plant; and it has been confidently asserted by several essayists, as well as previously in the public press, that certain sorts of Potatoes are what may be termed "disease-proof," on one or other of the following grounds:—(a), That the haulm dies down (and the Potatoes arrive at maturity) before the period at which the Potato fungus commonly makes its appearance; (b), That certain late kinds also are, as the result of experience, believed capable of resisting the attacks of the Potato fungus; (c), That certain new varieties are also able to resist the attack of the fungus.

The Judges therefore recommend—(1), That a sum of money (say £100) be granted for the purpose of inducing a competent mycologist to undertake the investigation of the life-history of the Potato fungus (*Peronospora infestans*) in the interval between the injury to the Potato plant and the re-appearance of the fungus in the following year. (2), That valuable prizes be offered for—(a), The best disease-proof early Potato; (b), The best disease-proof late Potato. The Judges appointed to award these prizes should be allowed three years to experiment with the competing Potatoes, and with the produce of those kinds which may be found to resist disease, in reference to their cropping, keeping, and cooking qualities. (3), That in order to encourage in the meantime the production of new varieties which may have the qualities already indicated, the Council should offer prizes for disease-proof Potatoes of new varieties to be sent in for competition in the year 1878, on terms and conditions similar to those already recommended. The Judges are of opinion that although all the experimental trials with the competing Potatoes should be under the supervision and control of one and the same Committee, yet that the Highland and Agricultural Society of Scotland, the Royal Dublin Society, and the Royal Agricultural Society of Ireland, might be invited to aid in an investigation of such magnitude, on the ground that the interest of Scotland and Ireland in the prevention of the Potato disease does not yield in gravity to that of England and Wales.

(Signed)

CHARLES WHITEHEAD,  
JOHN ALGERNON CLARKE,

WILLIAM CARRUTHERS,  
H. M. JENKINS.

## THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 13.

DURING the winter season, while labourers are engaged in trimming the hedges, and making-up the roads—and in the course of agricultural operations, waste ground along the sides of fields is often turned-up with the plough or the spade—hibernating humble bees are occasionally dislodged from their winter nests, considerably to their discomfort if not to their peril. It may happen that the worker, not expecting to unearth an insect, tumbles over the unfortunate bee with the clods of earth, dry grass, and *débris* he is turning up, and does not perceive it, in which case the bee may struggle forth and escape with life; but should the bee be seen, and the individual be a person himself interested in the pursuits of the garden, he will likely enough avail himself of the opportunity of dispatching a presumed enemy in a semi-torpid condition. More particularly will he be inclined to do this if he has sufficient know-

ledge of entomology to be aware that the destruction of humble bees in winter has much more effect towards the diminution of the race than the killing of a corresponding quantity in the summer time.

The prejudice against humble bees in the minds of some does not so much arise from a dread of the sting of these insects—for indeed it is very commonly, though erroneously, believed that they have no power to sting; but it is a matter of everyday observation with those engaged in horticulture that a humble bee, busy according to the proverbial character of the race, and seeking for honey, very often attacks the outside of a flower and cuts through the petals with its mandibles. This, which is not the invariable practice of any species, arises simply from the inability of the insects to reach the honey lying at the bottom of long corollas. To a very small extent, therefore, humble bees may be said to be disfigurers of flowers, yet they cannot deserve to rest under the stigma of belonging to the injurious insects, but quite the contrary, since they help in no small degree towards the fertilisation both of garden flowers and the bloom of fruit trees by conveying pollen from place to place. It might be pleaded in addition that several of the *Bombi* are decidedly handsome insects, and by their lively motions, and pleasant though perhaps monotonous hum, gratify our æsthetic sense. All, however, have not admired their vocal performances, or the insects would not have got the name of "Bumble bees" or "Dum-bledores," and these, or at least the former, got transmuted into "Humble bees,"—surely not by a cockney! It would be a mistaken inference to suppose that these Hymenoptera have any notable amount of humility as compared with their brethren. Also in some countries they have been known as "Foggies," possibly "Fogies;" and certainly humble bees have at times a fussy way of going about which might subject them to the charge of old-fogginess. In disposition they are most pacific both towards other insects and mankind, though through a brief period, during the hatching of the eggs of

the neuters, they are more ready to stand on the defensive. At most times the roof of the nest may even be raised and the structure examined without provoking the owners to use their stings, for stings they have, excepting the male humble bees. It must be confessed that in their economy they differ from the bee of our hives. Monarchical traditions have no hold upon these insects, for humble bees are strict republicans.

But as to their botanical labours? Without discussing here what is or is not the usual practice of other bees, we find three theories afloat anent the doings of the humble bees. Some say that they wander, led only by the impulse of the moment, from flower to flower; others, again, assert that in their excursions they confine themselves to one species, at least for each day; while a third belief is, that when collecting they visit plants of one family, or at least, if not quite so general as that, then those alike in appearance and odour, belonging to the same genus or to kindred genera. As bearing upon the subject, a statement has been quoted from old Samuel Purchas, who wrote upon bees in the days of Cromwell. He says, "Bees have this property, that whatsoever flower they first begin with when they go to work, they meddle with no other that journey, but bide themselves with such meat alone as that kind yieldeth.

This is a common but no catholic (*i.e.*, universal) custom." And he proceeds to show that if their supply of honey or pollen runs short they will go to any plant that will serve their purpose without regard to species. As no apiarist I hesitate to give an opinion as if *ex cathedra*, even with regard to the humble bee. But it cannot have escaped the notice of most naturalists that this insect, as contrasted with the hive bee, is of a more roving turn. I can hardly see that the one-species theory can be maintained with reference to it. Were it so, not much credit would be due to it for anything done in the way of fertilisation. That these insects exercise a "natural selection" of some sort is obvious, yet it does not follow that at any particular time all the residents in a district pursue the same plan. Different hives or colonies may vary.

The humble bees that await, through the rains and frosts of winter, the coming-in of the vernal season, are all of them of the fair sex. Ancient ladies they, as age is reckoned in their communities, yet not maidens, for each one becomes a prolific parent in the spring. Having shaken off the drowsiness of a six or seven-months sleep, the first object of the survivors of

the brood of the previous year is to discover a suitable spot for the location of a colony. The abode may be constructed of moss or grass, if such be the habit of the particular species; or should it be one that has an underground nest, the females fly in search of some hole already excavated: the deserted nest of a mouse or the gallery of a mole is applicable for the purpose. "Many hands make light work," and the mother in prospective of a happy family of humble bees finds that assistance will be a desideratum. Hence it is with great interest that the females watch for the appearance of the first hatch, composed only of neuters, which work diligently at the task of extending the cells and carry on the general business of the colony. Aware, seemingly, by her instinct that the failure of this brood would upset all her hopes of success, it is just at the season when the neuters ought to come forth that the



Fig. 1.—Nest of the Moss Humble Bee (*Bombus muscorum*).\*

female humble bee proves pugnacious and even spiteful.

The discrimination of the different bees commonly called humble bees (*Bombi*) is not an easy matter, and the separation of some of the species cannot be effected without examination by the microscope. In one species we often perceive a marked difference of size in the case of individuals of the same sex; but as a rule the females are largest, the males next in proportion, and the workers or neuters least of the three, averaging only half the size of the female. The insect known as the Carding or Moss Humble Bee (*B. muscorum*) has had its history ably described by Réaumur, his account being published by our Rennie, supplemented by his own observations, which are here, as usual, very truthful. These Carders, at the season they are most engaged in transporting moss to their nests, work in line, passing the materials along from one to the other, the last hauling each packet of moss, after it has been carded, into the nest. As the first in the line seizes the materials, cards them, and then passes the moss to the next, and each succeeding bee has only to push it by means of its legs towards the next, the work of the first is heaviest; probably it is relieved at intervals. This nest (*fig. 1*) is furnished with a dome of moss or dried plants, the base resting on the earth—only, however, upon a slight hollow, the cells not being entirely beneath the ground, as in the familiar *B. terrestris*.

\* From Figuier's "Insect World," published by Messrs. Cassell.

Returning to the subject of the early history of a colony. After the mother bee has, sometimes in a careless manner, formed several cells, and fed the young larvæ assiduously, after they have emerged, with honey and pollen until mature, she assists the young bees that are first ready to leave the pupa-case to free themselves from the envelope; and these lend their help to their brethren less forward. The neuters or workers that have thus emerged, though they construct new walls and cells, and also feed and nurture other brood, have an unfortunate fancy for eating the eggs—so it is asserted—which necessitates watchfulness on the part of the mother bee. The larvæ of humble bees are grub-like in appearance, white and plump, and of course quite unable to provide food for themselves; and it has been noticed that the males and females have a singular plan of helping-on the development of the pupæ by incubating the cocoons in which they are enclosed, and the elevation of temperature in that part of the nest is marked, according to Newport. The bees at first are soft, and the down so moist that they cannot fly; in the course of two or three days they are ready to leave the nest.

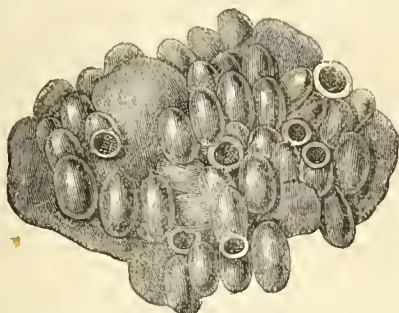


Fig. 2.—Cells from a Humble Bee's Nest.\*

The number of occupants of a nest (fig. 2) varies. Perhaps the first brood of neuters may count forty or fifty. As many as three hundred have been supposed sometimes to be in one of these towards the close of a season. Mr. Smith found in August, in one instance, 107 males, 56 females, and 180 workers. A little difficulty in ascertaining is caused by the erratic habits of some, who are given to the dissipated practice of stopping out all night, reposing among the summer flowers. In the autumn the males are the first to die-off, the neuters and the bulk of the females following. It should be observed that in some of their cells these bees store-up pollen and honey, the cells being differently formed to the larval cells.

Humble bees, like others of their brethren, have many parasites, somewhat singular—not to speak of their personal enemy, a species of *Acarus*, *vulgo* mite, which attaches itself persistently to the plumage of the majority of them. What has been designated the Bastard Humble Bee (*Apathus vestalis*), dwells in the communities of the true humble bee, thriving there, seemingly without toiling for its subsistence. The insects nearly resemble each other, but the false humble bees have no neuters or workers. A species of solitary ant is one of the strange visitors in the humble bees' nests, the larvæ devouring that of the bee; yet it is allowed by the rightful owners to attain its full growth. A quadruped also, the field mouse, is a diligent destroyer of the combs and nests of humble bees, and a modern naturalist asserts that it checks the multiplication of the bees more than all other foes.—J. R. S. C.

### CINERARIA CULTURE.

THIS old and familiar friend is a general favourite, and welcomed alike by rich and poor, as it appears in early spring in great variety of colour when flowers are rather scarce. It is very useful for decorating conservatories, greenhouses, and cottage windows, and when well grown yields a great quantity of cut flowers. Like most other things it is easily grown when people know how to do it.

March, April, and June are the months in which the Cineraria naturally flowers, but by sowing seed at various times it may be had in bloom from the middle of August till the May of the following year. It likes a rich soil, firm potting, and plenty of pot room. In about two parts rotten sods and one part rotten dung, well mixed and broken, it grows fast and strong, and flowers abundantly. When leaf soil is used in the

mixture, or instead of dung, the plants grow too "leggy," losing their compact and beautiful form.

Let us at once notice the simple mode of propagating and growing the Cineraria. When the plants are done flowering, say in May, they should be cut-down level with the soil in the pots, and planted-out in a rich shaded corner of the garden, where they should be allowed to grow or spring-up like herbaceous plants. About July they will be ready to be propagated by slips, a great number of which may be taken from each stool or plant. A few rootlets may be seen growing from each slip. When the young roots are about the size of cat's teeth the slips should be taken off, potted singly in small pots, and placed in a shaded frame. I say singly, for if two or more off-shoots are potted together they seldom do well, but if potted singly they will soon fill their small pots and require larger ones. Let them have shifts into 5-inch and 7-inch pots as soon as needful; and about the end of September let them have their final shift into their flowering pots. If grown in a span-roofed house they should be placed near the glass on the north side of it, for Cinerarias do not thrive so well under the direct rays of the sun. Plants thus treated, and fairly dealt with in other respects, will be respectable specimens of good culture, commanding the attention of all who come near them.

Now for seedling Cinerarias: I have generally for out-door display sown seed at the beginning of February, and treated the seedlings like some kinds of bedding plants, for instance Lobelias; and I have frequently used Cinerarias and herbaceous Calceolarias as bedding plants. A bed of Cinerarias looks well for a short time, but unfortunately flowers of this plant out of doors run to seed very soon.

For autumn and winter-flowering plants I sow seed at the beginning of May, and grow the plants out of doors on the north side of a hedge or wall during the summer months.—A. PETTIGREW.

### THE ROYAL HORTICULTURAL SOCIETY.

WHAT is to be the upshot of all the agitation that is going on in the horticultural world, or rather amongst those connected with the Royal Horticultural Society?—a question that must be occurring to many besides myself, and one that requires careful consideration.

If we are to believe what report says, the Society is in a complication of difficulties of long standing, and there are evidently a variety of schemes afloat for setting it to rights, but without either unanimity of purpose or action. In fact, it would appear that there are a number of cliques, each agitating on its own account for something, and as regards several of them, it is by no means apparent what that something is. We are weekly made aware of the existence of Mr. G. F. Wilson's clique, proposing the reduction of the Fellows' subscription to a guinea as a certain restorative, also, I believe, advocating removal from South Kensington; but Mr. Wilson does not state where he would take the Society to. According to Mr. Wilson's statement there is a clique of "competent horticulturists in London engaged in the work of reconstruction." Reconstruction of what? for I am not aware that any London society has as yet actually fallen to pieces, therefore what does this reconstruction mean? Perhaps this clique meditates turning the present Council out in February, and the reconstruction means putting themselves in their places. If so, it would be well to know who these "competent horticulturists" are, and what their subsequent policy would be.

Then there is the vote-by-proxy clique, who, I believe, have requested the Council to summon a meeting of the Fellows. To do what? Why, "to make a bye-law to give the power of voting by proxy." Now, if I read the charter aright, the Fellows do not possess the power of making a bye-law at all; consequently the meeting will be a futile one, independent of the fact of a similar proposal having already been negatived once this year.

A clique of horticulturists which existed a short time since, called the "Horticultural Defence Committee," took upon themselves (in conjunction with another clique I believe) to go as a deputation to Her Majesty's Commissioners, at least so the Defence Committee's report stated; but query, did they not merely go to Her Majesty's Commissioners' office? However, be this as it may, what did they go to do? Nothing but mischief, for they possessed no power to make arrangements with Her Majesty's Commissioners, even if they met them; nor had they any authority from anyone to attempt to do so. In fact this movement on their part looked to me very like the

rank and file rushing over to the enemy's camp without either the presence or authority of an officer, simply to be caught in a snare prepared for them.

I read a proposal to build a club house at Chiswick for the convenience of the country gardeners, as a meeting place, &c. This seemed to be in connection with Mr. Wilson's guinea scheme.

Then there is what is called the Kensington clique, a large and wealthy clique too, and one that contributes largely to the Society's funds, who, it is said, desire that the South Kensington gardens should be kept in first-rate order (at the Society's expense) for themselves and their friends to play croquet in, with frequent flower shows and hand-playing for their own, their children's, and their nursemaids' amusement.

All these cliques are apparently pulling in different directions; the more they pull and waste their strength, or, in other words, the more they squabble and disgust the subscribing Fellows, and consequently fritter away the Society's means, the better, I guess, it will be liked by the mightiest clique of all—Her Majesty's Commissioners, who, under these circumstances, will have simply to bide their time and let these cliques go on fighting till, like the Kilkenny cats, there is nothing left but their tails; then they will be able to walk quietly in and swallow-up what little remains, and all the cliques had been fighting over.

This, I fear, will be the upshot of matters connected with the Royal Horticultural Society if we do not mind.

I am not aware if any of these cliques has consulted the Council, which is the only body possessing any power to make arrangements with Her Majesty's Commissioners, or anyone else. Whether this body is unanimous upon a policy or is also divided into cliques I know not; but it is whispered that they too, either in their corporate or individual (a mode of proceeding as ruinous as the Defence Committee's capacity, or both, have in some way or other endeavoured to induce Her Majesty's Commissioners to come to some arrangement. If this be so, in which way, and with what objects in view, it is the duty of every Fellow to make himself acquainted, and the duty also, I take it, of the Council, in a business-like and straightforward manner, to inform us, and not to follow the example of the previous Council of trying to sell us, and then expecting us, without consideration, to vote upon the instant the confirmation of the warrant for our own execution.

If there are a few independent Fellows who take an interest in the Society's welfare, and who are desirous that it should be preserved intact, and that it should maintain the position which the Royal Horticultural Society of England ought to occupy; moreover, that it should be free to manage its own affairs, financial and otherwise—free, in fact, from all foreign control, and free to expend its income for the promotion of the science of horticulture—I say, if there are some who have not formed themselves into party cliques, but who are desirous of promoting these views, it is time that they should come forward and sign a requisition also, requesting the Council to call another meeting (or to arrange for the continuation of the one already called), not to consider an isolated question which can be brought to no issue, but to consider what can best be done to reinstate the Society in an independent and prosperous position; at the same time soliciting the Council to state plainly their views and policy, and to assist them in solving the problem.

I cannot bring myself to believe that Her Majesty and the Royal Family can really intend to desert the Society, the prosperity and maintenance of which at South Kensington formed a part of the late Prince Consort's scheme both for the promotion of the science of horticulture in conjunction with other sciences there, and for the adornment of the Kensington estate.

There can be no two opinions, I think, as regards the desirableness of coming to "satisfactory" arrangements with Her Majesty's Commissioners if possible; but what those arrangements should be requires mature consideration, and I maintain that the whole body of the Fellows should be consulted, and given ample time to consider. We must bear in mind that we possess for nineteen years the control of most valuable property—property, too, that Her Majesty's Commissioners want at once; in fact, bad as our affairs are said to be, I believe we possess the means (if judiciously handled) of inducing Her Majesty's Commissioners to come to us (instead of our going to them), and with such an offer of terms that would enable the Society to maintain an honourable and independent position, and at South Kensington too. But if Her

Majesty's Commissioners will not meet us upon fair and honourable terms, then let us keep them out of every inch of ground that belongs to us, and make no temporary arrangements whatever with them.—JOHN DENNY, *Stoke Newington*.

P.S.—The word "clique" is intended to apply in its classical meaning, not in the now generally accepted one.—J. D.

As Mr. Wilson proposes to alter my letters I would ask him to be accurate when doing so. "The old Council was" not "caused to retire by a very small number of votes and those mostly local ones." The number on the last—*i.e.*, the third—occasion of voting was nearly 450, besides which many, I should say one hundred, persons were present who did not vote on either side. Those who have been present at other elections will quite agree with me that at no previous occasion (except in 1864 when about one hundred votes were taken) had there been one-sixth of that number of votes. This remark applies to all the elections at which Mr. Wilson was placed on the Council. I see by a circular that I have just received that Mr. Bateman, and those who are in favour of the proposed proxy bye-law, consider three hundred votes quite sufficient to justify the introduction of that serious innovation. These are the only affirmative answers. How many negative answers they have received they carefully refrain from mentioning.

Persons pay rent when it becomes due, and not till then [see clause 14 Royal Horticultural Society's Charter, R. H. S. "Proceedings," June, 1861, page 531]. When the £2400 annual rent becomes due we may be sure the Commissioners will make the Royal Horticultural Society pay it.

The Commissioners of Woods and Forests are appointed by the Crown, so also are the Commissioners of 1851, and both are appointed for public purposes. The former by the terms of their appointment are bound to improve the pecuniary value of their trust, while the latter are under no such obligation. If, then, the former can and properly do give great pecuniary advantages to the Zoological and Botanic Societies, so the latter, by their agreements with the Royal Horticultural Society, do and properly ought to give the same to the latter Society. With regard to the one-guinea subscription the country Fellows might say, "We have no chance of enjoying the recreation portion of the gardens, so we will only pay one instead of two guineas." So Mr. Wilson must allow for one new guinea Fellow to make up for the amount he would lose by each diminished subscription. During the six years I lived entirely in the country I may safely say I could not have entered the gardens as many times for purposes of recreation. I am not a South Kensingtonian, but a staunch horticulturist. I oppose proxies because I have seen how, by artistically-drawn-up circulars which are to be signed "without delay," many are led to give their proxies, and have not the moral courage afterwards to withdraw them when they find how such documents have deceived them. I have seen the effect of proxies in large trading companies as well as in learned societies, and dread it equally in both.

Mr. Wilson thinks he can shift his responsibilities very easily on to the shoulders of his predecessors. To my mind the man (even if Mr. Wilson's assertions be accurate) who pursues and supports a ruinous course is as responsible for its disastrous effects as the man who initiates it.—A LIFE FELLOW, R. H. S.

## AURICULAS—MR. TRAIL.

ANOTHER veteran florist is gone from amongst us, and in ranks that are thin such gaps fill slowly. Mr. Robert Trail, born near Montrose in 1796, died at his residence, Aberlady Lodge, Drem, early last November. He was one of the most enthusiastic members of the Edinburgh Botanical Society, sparing no pains to take part in its meetings and discussions. He also showed a very deep and lasting interest in the Infirmary and Lunatic Asylum at Montrose, acting as a director of these institutions for many years.

As a florist Mr. Trail was best known for his attachment to the Auricula, and his fair success with it. Contemporary with our sadly-missed friend the late George Lightbody, living to the same age, and for the same forty years working patiently like him at improving the beauties of a favourite flower, it will rightly be supposed that so long patience has had its reward. This has been so, and Mr. Trail, like his old friend George Lightbody, of Falkirk, has obtained honours in a difficult subject, leaving us some very beautiful varieties of the Auricula.

What a strange nature has this hardy little favourite! Not

that it is bad to grow, but because it has suffered no one man, as yet, to boast of many victories over its weak points and native imperfections. Lists of other cultivated flowers alter, oh, how quickly! A Rose election is necessary now and again to pick quality out of quantity. But the high blue-blooded *Auricula* is more than a queen in this. It knows little of such revolution and abundance. We have the belles of fifty seasons blooming by the side of *débutante* beauties and holding their own. But it is just a difficulty which gives zest to the pursuit and value to success. My favourite, the *Auricula*, is all the more to me for not being a facile flower on this point. With one surpassing triumph I should feel like the lioness in the fable, whom the dog with many whelps reproached for having but one cub. "True," said the royal mother, "but you forget that that one is a lion!"

Mr. Trail, like all true florists—and this is why florists' flowers thrive with florists only—always took the culture of his favourite flowers into his own hands. He was ever most generous with them, and would freely give young plants to all who would properly care for them. In the case of a valuable seedling this generosity sometimes comes back after many days. Mr. Trail knew the pleasure of occasionally receiving from friends again the seedlings of which he had himself lost all stock. He looked a very aged man when he came all the way from Edinburgh to Manchester for the last National *Auricula* Show, and told us how well the sight repaid him. He was glad to see how good some of his own seedlings could come—better than he had thought—and he brought pips of a few of his last to show us. We did hope once or more again to meet him thus, but he almost shook his head. He could not promise—and he was right.—F. D. HORNER, *Kirkby Malzeard, Ripon*.

### TRAINING POTTED CLIMBING PLANTS.

THE cheapest mode, as a correspondent, "CHELMSFORD," observes, is by the aid of sticks, and we prefer them painted



Fig. 1.



Fig. 2.

brown rather than green, the parts of them that are visible then look more like parts of the stem. But Mr. R. Read, many years since, suggested the mode very generally adopted, and represented in the following woodcuts. It is simple and convenient. The rods (*fig. 2*) and rings (seen in *fig. 1*) are made of strong galvanised wire; but they might also be made of wood with iron hooks. The hooks should be made to fit the ring exactly, and the rods can be made of any length, according to the nature of the plant they are meant for. Also, when necessary, they can be taken out of the pot, painted, and put together again with very little trouble.

**MUSHROOMS IN DECEMBER.**—One morning in the second week two men, named Mark Greenough and Edward Chew, found in fields at Low Moor, Bradford, Yorkshire, upwards of 2 lbs. of Mushrooms, the largest weighing nearly 17 ozs.

**STRAWBERRY COMTE DE ZANS.**—I have not seen the variety called *Comte de Zans* mentioned. This is a first-class variety, as productive as *Black Prince*, and in size of fruit like *Pre-*

sident. I first saw it at Darlington, and was much struck with its prolific character, a plant in a pot having been shown with about fifty large fruit. It seems to be a great favourite near Darlington. I find that it succeeds satisfactorily on this east coast, where several kinds never bear at all.—R. H. D.

### NOTES AND GLEANINGS.

SINCE the year 1871 a Japanese silkworm, the *YAMAMAYA*, which feeds on Oak leaves, has been in process of successful acclimatisation in Bavaria and Wurtemberg. The caterpillar is green, and about a finger's length; it appears in spring, and the moth lays its eggs in August. These pass the winter in the open air. The worms are generally kept in a well-ventilated room, and require little attention. This is the summer *Yamamaya*; but, as we learn from a German source, a different insect, the winter *Yamamaya*, has lately been introduced, and is likely to displace the former, inasmuch as it yields two generations each year—at the beginning and end of summer. The summer *Yamamaya* passes the winter only as an egg; the winter *Yamamaya* only as a cocoon. The summer *Yamamaya* lives as caterpillar, cocoon, and moth only in summer. About the end of April it leaves the egg as a caterpillar, and it dies as a moth about the end of August; its eggs giving the worms of the next year. The winter *Yamamaya*, on the other hand, passes both summer and winter as a cocoon, and the moth appears in April or May. The worms appear from its eggs in about a month; the spinning of the cocoon begins between the 7th and 27th of July, and the moth leaves the summer cocoon between the 5th and 28th of August. Though the winter *Yamamaya* appears as a worm later than the summer *Yamamaya*, it precedes the latter as a moth. The eggs which it now leaves produce worms in ten or twelve days; after fifty-two days these spin their cocoons in which the winter is passed. These cocoons bear a cold of 10° R. There are other advantages in using the winter *Yamamaya*; the spring worms appearing later than those of the summer *Yamamaya*, Oak leaves are more easily procured; the animal also eats more readily, spins a larger and better cocoon, and lays more eggs. The acclimatisation is now being prosecuted with vigour in Siebenbürgen and the south of Austria.—(*English Mechanic*.)

—VICE-CONSUL DUPUIS reports that the ROSE HARVEST OF 1873 in the villayet of Adrianople has on the whole been remunerative to cultivators, and the crop is said to yield about 500,000 miscals, or about 93,750 ozs. of otto or attar of Roses, and is valued at about £70,000; but, owing to the moist weather, distillation was profuse, and the product is consequently less strong than in 1872. According to the degree of dryness of the season it takes from 8 to 9 okes (23 to 24 lbs.) to 14 to 16 okes (38 to 44 lbs.) of the blossoms to produce one miscal of oil; and the price ranges, according to quality, from 14 to 18 piastres the miscal, or from 13s. 1d. to 16s. 10d. per ounce. The mode adopted for testing the purity of the different qualities of these oils is to put the essence into flasks, which are afterwards immersed in water at a temperature of 63° to 68° Fabr.; if the quality be good, it will freeze, and this oil is preferred to all others as being of the purest kind. Some inferior oils will not freeze even at 52°. The oils from various soils differ greatly in quality; and manufacturers frequently adulterate the oils by an admixture of a substance produced by them from certain kinds of grasses. Otto of Roses is mostly exported from Adrianople to Germany; buyers from that country annually resort to Adrianople, and make purchases to the amount of about 62,000 ozs., the remainder finding ready markets in Constantinople and the East.

### ARUNDEL CASTLE.

THE SEAT OF THE DUKE OF NORFOLK.

THE Premier Duke, the Earl Marshal of England. These are high-sounding titles, and of long descent; but not less honourable is that of his eldest son, the Earl of Arundel, who is a peer of Parliament during his father's lifetime, so long as he holds the Keep of Arundel. We only know of one parallel case in the peerage. For years no notice has been taken of Arundel Castle gardens, and it is only now that, through the kindness of "A Visitor," we are enabled to present our readers with a few jottings of what is there to be seen. More than a quarter of a century ago he tells us he was there, and passed many a day in the beautifully-wooded park of between

1200 and 1300 acres, and in which is what is said to be the grave of Bevis of Hampton. We will, however, preface our correspondent's jottings with a brief outline of the history of the place.

A tradition of Sussex alleges that in the Bevis Tower of Arundel Castle resided the giant so named, that he had a weekly allowance of one ox, two hogsheads of beer, and corresponding quantities of bread and mustard. Moreover that his horse was named Hirondele, after which not only the castle was named but the whole district, now corrupted into Arundel. We are contented to believe that the name means the broad dell or valley along which the river Arun passes. Even in early Anglo-Saxon times it was a place of mark, for King Alfred devised to his nephew Anthelm the Manor of Arundel. In Domesday Book it is called "the castle of Harnudel," and was given by William the Conqueror to his favourite military chief and relative Roger de Montgomery, but as he revolted and supported the king's rebel son this estate was forfeited to the Crown. Henry I. settled the estates and earldom on his second wife Alice of Lorraine who subsequently married William de Albiui, and by marriage one of their descendants brought it to a Fitz Alan, who assumed the earldom "by tenure only." In 1579 it again passed by marriage to Howard, Duke of Norfolk. Philip, Earl of Arundel, his son, was attainted, and Queen Elizabeth seized the Honour of Arundel, but it was restored to his son in 1609, and has since remained the possession of the family.

During the parliamentary war the castle was battered down by Sir William Waller in 1643. Thomas, Duke of Norfolk, in 1716, added and fitted-up a brick building for temporary residence, but this was removed in 1796. In 1786 Charles, Duke of Norfolk, restored the Castle according to his own design. The square tower of the N.E. angle was begun in 1791, and the south front in 1795. The Great or Baron's Hall on the western side of the Court was begun in 1806, and connected with a chapel at the north end. The new gateway was begun in 1809. The Keep, a circular tower, and some of the walls of the ancient Castle remain. The Owls were kept in the Keep.

ALTHOUGH it is now upwards of twenty-five years since I visited Arundel, yet the little change which the town has undergone was to me striking; it seems to be at a standstill, notwithstanding that the railway has been brought nearer it, and the distance from London has been shortened from upwards of seventy to less than sixty miles. In the gardens, on the other hand, great alterations and improvements have been effected; trees have grown-up that were merely young plants, and the extent of glass has been largely increased.

From the commanding position of the castle, the pleasure grounds surrounding it present a great diversity of level, sometimes ascending to the Castle, at others overlooking the pasture land of the vale. By the side of one of the walks two noble specimens of *Cupressus macrocarpa*, which must be upwards of 35 feet high, form conspicuous objects, and near them is an Irish Yew 25 feet high, together with fine examples of *Thujaopsis borealis* and *dalabrata*, *Abies Smithiana* from 50 to 60 feet in height, and *Picea cephalonica*. A Cedar of Lebanon, stated to have been planted in 1830, has branched low down the stem, and covers a space 60 yards in circumference. *Paulownia imperialis*, besides its noble foliage, offers an additional attraction in its flowers, which are produced every year. Passing by a valley on the left, the banks of which bear a profusion of the common Hart's Tongue Fern, and are overhung with Yews and tall timber trees at the back, the flower garden is reached through a new gateway, close to which are the ruins of the old barbican. This garden, of which the accompanying is a representation, from a photograph by Mr. Russell, of Chichester, is of great extent, and when the bedding plants are in full bloom it must have a brilliant effect, especially when viewed from the Keep, to which the public are admitted on certain days. It is entirely within the ramparts, along which the Pampas Grass waves its silvery plumes, and the walls are partly clad with Ivy, while on other parts fruit trees are trained. The most conspicuous objects at present are the magnificent standard Portugal Laurels, several of them standing 12 feet high, and some fine Bays. The borders at the sides are filled with herbaceous plants; and as a proof of the mildness of the climate of Arundel, and of the mildness of the winter as well, it may be remarked that within a week of Christmas Veronicas and *Chrysanthemums*, also bedding Pansies, were in full bloom.

At one end of the flower garden is a Loquat tree, but this, though it flowered two years in succession, has not as yet fruited, even though one year it was covered with glass.

On passing-out of the flower garden on the opposite side, one finds oneself on the edge of a steep hill, commanding an extensive view over the Mid-Sussex Railway, with pasture land in the foreground, while at the foot of the hill is a kitchen garden of 4 acres, through which runs a stream, where Watercress is grown in abundance. From its low position I should conclude that spring frosts would be destructive here; and it is probably on that account that only the hardier kinds of vegetables are grown there. Along the edge of the hill a walk skirts the outside of the Castle. On the bank on one side a profusion of *Scelopendrinums* and *Polystichums* delight the eye, while the steep declivity on the other is studded with Box, Yews, and Hollies, and nearer the base with lofty Oak, Ash, and Beech trees.

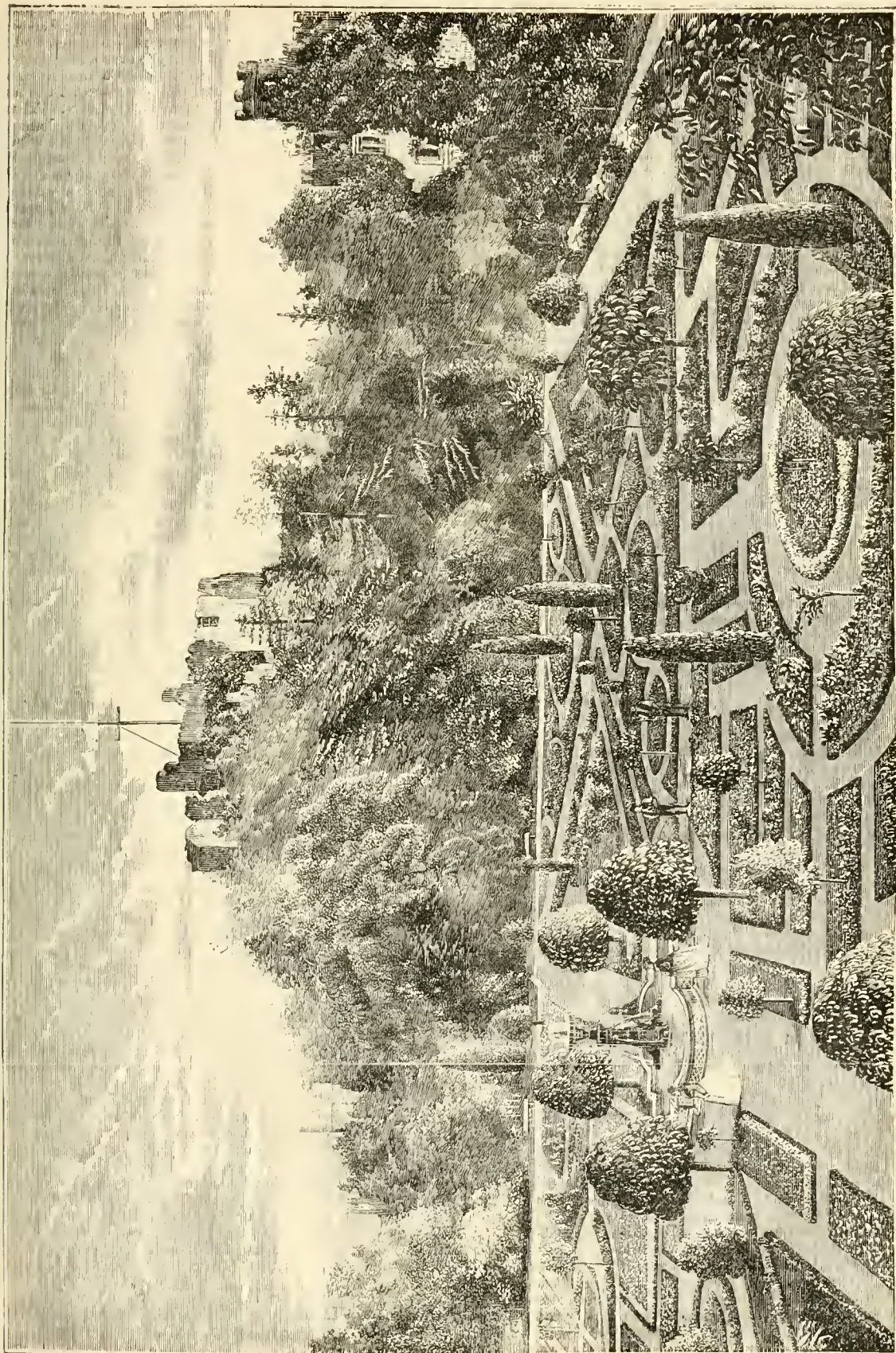
I next entered what is called the Castle Park, to distinguish it from the larger park. The sides of the boundary walks are planted with *Arancarias* and *Deodars*, the whole area being surrounded with *Laurustinus*, Hollies, and mixed shrubbery, with Lime, Thorns, Spruce, Elms, and Oaks in the background. I was much interested in some of the trees in this park, and for this reason—two of the Oaks planted by Her Majesty and the late Prince Consort in December, 1846, had been there only a few months at the time of my former visit, and slow-growing as the Oak is, they are now trees. That planted by the Prince Consort is much the finer tree, and one would suppose it to be a quicker-growing species. A *Cryptomeria*, planted by H.R.H. the late Duchess of Kent in 1848, is now a noble specimen; and a *Wellingtonia* planted Oct. 8th, 1858, long after my visit, I should judge at little less than 30 feet high. In this park there are two tanks, one to supply the town, and one for the Castle; but in the Great Park there are, besides, two large tanks as a reserve.

Next I will glance at the kitchen garden and forcing department, and before coming to the principal one, containing the glass structures, I will take the outlying portions. First there is an orchard of 5 acres, in which is also the frame ground, where Sea-kale, Rhubarb, Asparagus, Potatoes, &c., are extensively forced, whilst light after light was filled with Lettuces, as well as with Strawberries, in readiness for being forced. Passing through a tunnel under the London road, with the sides of the walk planted with Cedars, Yews, Aucubas, and other shrubs, we come to another large kitchen garden partly walled, and the walls planted with Peaches and Nectarines, Plums, and Cherries, and the borders with Apples and Pears, Gooseberries, and Currants. A considerable portion of the ground slopes southward, and is consequently well adapted for the production of early crops, and though the sea can be seen from the higher portion, the position is well sheltered by woods from the sweep of the winds.

Next comes the walled garden, in which are the forcing houses, having an area of some 5 acres. The principal walls surrounding it are 16 feet high, and provided with broad wooden copings; they are planted with Peaches, Apricots, Figs, Pears, Plums, and Cherries, according to aspect, and the borders with trees of the last three fruits and with Apples. Some queneuille-trained Pear trees 10 feet high are found very productive. Against the south wall is the old lean-to range, nearly in a line with the gardener's house, where, by the way, was a hedge of Roses in bud and bloom. It is upwards of 50 yards in length, about 18 feet wide, and is in three divisions, the first being a Peach house, and the other two vine-ries. The whole was undergoing repair preparatory for forcing, which, but for that circumstance, would have been commenced at an earlier period. There is an ample provision of shelves all round, as well as at top, for Strawberry-forcing and other purposes. On the wall at the west end of this range is a large old *Wistaria*, which extends 160 or 170 feet along the top of the west wall.

The Pine pits run parallel to the last-mentioned range, and are three-quarter-span, 48 yards long, and in three divisions, two of which are occupied by fruiting and the other by succession plants. The front sashes slide down, and the back lights are also moveable, pushing outwards. For bottom heat Oak leaves are employed. The varieties grown are the Smooth-leaved Cayenne, Charlotte Rothschild, Black Antigua, Black Jamaica, Moscow Queen, and a few Montserrat. Several fruit ripe and ripening were large and handsome. Shelves at the back and in front are utilised for Strawberry-forcing, &c.

Next comes a fine new range consisting of two iron lean-to



ARUNDEL CASTLE—THE KEEP AND FLOWER GARDEN.

houses about 15 feet high at back, and 20 or 21 feet wide, each 19 yards long. It is worthy of note that the glazing-bars are of copper, which, though very enduring, must have entailed a heavy expense at first. There is a broad flagged pathway at back, and in each house there is a deep tank in which the rain water is collected. These spacious structures are used as vineries; and a corresponding pair of similar dimensions are used as Peach houses. In one the Peaches are trained in the ordinary way on a trellis near the glass, but in the other they are planted out in the border orchard-house fashion, and trained with umbrella heads; on the back wall in the one case are Figs, in the other Peaches and Nectarines. There are, in addition, two fine span-roofed houses running north and south, 24 feet wide and about 70 feet long. One of these is a vinery, planted with Black and white Muscat of Alexandria, White Nice, Lady Downe's, Black Damascus, and some other varieties, but the greater part of the crop had been cut; the other is a Peach house planted with umbrella-trained trees, with, in addition, some Plums and Cherries.

I will pass over the remainder of the glass, which comprises a number of heated pits in which bedding plants, and *Dracenas* and other fine-foliaged plants are grown for house decoration; for Arundel is a fruit-growing, not a plant-growing place, and in the days of McEwan its victories were numerous in the "tented field" of Chiswick, as well as at the Regent's Park.

I have to apologise for the imperfect notes which I place at your disposal, for my run through the place was rapid, and the time of year one of the least favourable that could have been chosen for such a purpose; at the same time, in concluding, allow me to place on record the order and cleanliness in which the grounds are kept.—VISITOR.

### GARLANDS.

THE use of garlands both at weddings and funerals is of great antiquity. According to Pliny, however, flowers were not used in garlands till about the year 380 B.C. Before this date they were composed exclusively of branches of trees or green herbs. He relates that the painter Pausias being in love with the garland-maker Glycera, first caused flowers to be combined with the green. These two, the one working in the materials nature gave to her hand, the other imitating them on his canvas, vied with each other in the novelty and taste of their designs, and thus introduced the fashion. Among the Greeks, Roses, Violets, and Myrtle appear to have been the favourite flowers for garlands. The first, sacred to the Graces, as well as to the god of silence, the second believed to have health-restoring powers, and the third dedicated to Venus, whose altar was decorated with wreaths of Myrtle. By the laws of the twelve tables, those were crowned with garlands when dead, who in life had merited the honour. The public games had each a distinctive crown, and not only had the victors their temples wreathed with Parsley, Fennel, or other herbs, but, according to Pliny, a like token of respect was granted to their parents. Amongst the Romans the same custom prevailed; and a civic crown of Oak leaves was the reward of him who had saved the life of a Roman citizen. A Roman bride wore a chaplet of flowers and herbs upon her head, and a girdle of wool about her waist, and at funeral feasts the mourners wore garlands while celebrating the virtues and achievements of the dead.

When paganism retired before the advance of Christianity, all ancient customs were not abolished; and the beautiful and significant use of herbs and flowers at weddings and funerals was still retained. In Cole's "Art of Simpling" he thus speaks of garlands formed of the Cypress, Rosemary, and Bay. "They are all plants which fade not a good while after they are gathered and used—as I conceive—to intimate unto us, that the remembrance of the present solemnity might not die presently, but be kept in mind for many years." Flowers, on the contrary, were used as emblematic of the shortness of life. Amongst the Anglo-Saxons, flowers appeared both at their bridal and burial feasts. After the "benediction ceremony," as Strutt calls it, the bride and bridegroom were crowned. But as these garlands were kept in the church on purpose, they must of course have been composed of artificial flowers. That bridal chaplets continued to be worn, contemporary writers bear witness. Chaucer takes care not to omit the garland in describing Griselde adorned for her marriage. In the fifteenth century brides wore garlands either of flowers or corn ears.

The poets and authors of the sixteenth and seventeenth centuries abound with references to plants and flowers as used both in bridal and funeral ceremonies. At this period, trees,

herbs, and flowers had a clearly defined significance. Cypress and Yew were emblematic of death and immortality; Rue was the "herb o' grace;" Rosemary was for remembrance, and is mentioned by several old herbalists as good for strengthening the memory. Violets symbolised fidelity, the Columbine desecration, and the Willow has been from time immemorial the tree of mourning, especially devoted to forsaken lovers. These sweet old superstitions have disappeared before the light of reason. We no longer believe in the signatures of plants, and their consequent efficacy, but the familiar flowers of our poets still speak to us in a language we feel, while the grander exotics are dumb. Strutt gives a detailed description of a wedding procession in the time of Queen Elizabeth. The author is speaking of the marriage of his hero. "The bride being attired in a gown of sheep's russet, and a kirtle of fine worsted, her head attired with a billiment of gold, and her hair as yellow as gold hanging down behind her, which was curiously combed and pleated, according to the manner of these days; she was led to church between two sweet boys, with bride laces, and Rosemary tied about their silken sleeves. Then was there a fair bride cup, of silver gilt, carried before her, wherein was a goodly branch of Rosemary gilded very fair, and hung about with silken ribbons of all colours; next there was a noise of musicians, that played all the way before her. After her came the chiefest maidens of the country, some bearing bride cakes, and some garlands made of wheat finely gilded, and so passed to the church; and the bridegroom finely apparelled, with the young men followed close behind." By this it would seem that the emblematic garlands were carried by the bridesmaids, and that the bride wore instead an ornament of gold.

At the end of the seventeenth or beginning of the eighteenth century, garlands were still borne at funerals, though they were then mostly composed of artificial flowers, with a mixture of gold and silver tinsel, silk, dyed horn, and other tawdry additions. In the centre of these crowns or garlands hung a piece of white paper shaped in the form of a glove, on which the name and age of the deceased were inscribed. In Yorkshire and other parts of England the custom of hanging up garlands of cut white paper over the seat that a "virgin dead" had once occupied in church, prevailed to a late date. At the present time in various parts of Germany and northern Europe, a maiden when laid in her coffin is crowned with a Myrtle wreath. In the south also the bodies of young girls and children are crowned, but generally with artificial flowers, too often of a tawdry kind. The wreaths of *Immortelles* on the tombs abroad, particularly in France, are familiar to everyone. It is a touching spectacle to see whole families loaded with flowers and garlands, trooping to the cemeteries on All Souls' Day, to deposit their tribute of love at the graves of the departed. In *Père-la-Chaise*, the tomb of Abelard and Heloise used to be pointed out, the effigies almost concealed by wreaths of *Immortelles* placed there by *les amoureux infortunés*, it was said.

To revert to the brighter side of the subject, garlands have continued to constitute an essential part of bridal array in all countries, though the flowers selected for this purpose vary. In Normandy Roses find favour. When a man has little or no dowry to give his daughter, it is a saying there, that he will give her a chaplet of Roses. In Italy the Jasmine is the flower selected. In Germany the Myrtle wreath prevails, as in the classic days of Greece and Rome. It is a frequent practice for a young girl to plant a Myrtle, and to watch and tend it till the time arrives when she requires the delicate blossoms for a bridal wreath. Should she die unmarried, the same Myrtle furnishes her *Todtenkranz*. It is considered extremely unlucky to present another with Myrtle from a plant dedicated to one alone, either for life or death. The Myrtle crown of the bride is frequently alluded to by German poets. In the northern provinces of Germany, and in Scandinavia, the bridal crowns are composed of artificial Myrtle, ornamented in a manner more showy than tasteful, with additional flowers in gold and silver. These crowns are often a foot or more in height. In the evening the garlands are *abgetanzt*, danced off; a lively tune strikes up, and the bridesmaids and other girls dance round the bride, who is blindfolded. Suddenly the music stops, when the bride places the crown on the head of the girl who happens to stand before her at the moment. Of course the maiden thus crowned will be the next to be married.—(*Argosy*.)

### NOTES ON VILLA AND SUBURBAN GARDENING.

Look over window plants in pots carefully, and with a soft sponge or piece of cloth and some clean, soft, milk-warm water

wipe the dust from every leaf. Small-leaved plants, such as Myrtles, may be more speedily cleansed by dipping their heads in a tub of water, and whisking them several times through the water. The health of plants to a very great extent depends on the pores of the leaves being free from dust. What the lungs are to the animal the leaves are to the plant. Any that are infested with green fly should be put into a large tub or box and fumigated gently with tobacco smoke two days in succession, giving them about an hour and a half each time. Keep the surface of the soil in the pots open, and the pots clean. Beware of overwatering Geraniums, and, in fact, all plants at this dull season. One of the very best window plants is the old neglected Lily of the Nile, *Calla aethiopica*. Another first-rate and easily-managed plant is *Dielytra spectabilis*. When it has done flowering it should be placed-out in a light rich soil, be lifted and potted in September, and when the foliage has decayed put it in any cool place till it begins to grow, when it may be transferred again to the window.

The amateur who possesses a greenhouse should towards the end of the month shift Geraniums that are well rooted, using a rather heavy and rich soil, potting and keeping the plants well tied and near the glass. See that Camellias are never allowed to get dry at the roots, otherwise you may lose your buds; and do not expose them at any time to cutting currents of air. Calceolarias that are well-rooted in small pots should have more pot-room. A soil of half loam and well-decayed dung or leaf mould, with a little sand, suits them well. Keep Verbenas, Scarlet Geraniums, and other bedding plants free from dead leaves. If you have Vines in your house and they are not yet pruned, lose no time in getting it done. Little can be done out of doors at present beyond the collection of manure. Road-scrappings and turf-parings are excellent for mixing with your pig manure, and these, well saturated with soap-suds and other fertilising liquids, will make a famous dressing for your garden in spring. Where the ground has been previously rough-dug or ridged, fork it over on frosty mornings, so that the frost may penetrate and pulverise the soil to a greater depth. As we may yet expect to have some severe weather, any plants, such as China Roses, that are rather tender should be protected, for having been somewhat excited by the late fine weather, frost will have more effect upon them and might prove very injurious. Any hardy climbers on walls, as Clematis, &c., if not previously done, may now be neatly trained.

**VEGETABLES.**—Marshall's Dwarf Prolific and Mazagan Beans are the kinds generally used for early crops. The latter is the hardier; and if not done before this, some may be sown for an early crop as soon as the weather will allow, in shallow drills about 18 inches apart. On a warm border they may be planted in the row about 3 inches apart, and covered about 2 inches deep. On the first fine day a sowing of Dillistone's Early or Sangster's No. 1 Peas may be made on a warm sheltered border, which should have been ridged crosswise. Draw the drills within 3 inches of the bottom on the south side of the ridge; this will keep the seeds dry and prevent them from rotting, as sometimes happens, especially in a retentive or clayey soil. For this crop the seeds should be sown pretty thickly, and in case of intense frost they should be protected by fern or furze. Some of the latter chopped may be put in the drills to prevent the ravages of mice.

**FRUIT.**—Any fruit trees trained against a wall may now be pruned, have their shoots raised quite straight, and disposed so as to cover the wall equally. Standards may also now be pruned, taking care to cut-out all cross-branches. Gooseberries and Currants, if not previously pruned, may now be gone over, so as to allow the ground to be dug between them.

**FLOWERS.**—If any bulbs, such as Daffodils, Anemones, or Tulips, are not already planted, the earliest opportunity should be embraced for getting them in. Those planted in October will now be above ground; they should be covered with fern to keep them from frost. Every unsightly object should be removed from the flower borders, so as to give them a neat appearance.

**WINDOW PLANTS.**—Spring and autumn are the times of the year at which window plants require the greatest attention. It is usual to have the plants outside the windows even during the night in the summer season, and kept in the house both night and day during the winter. In the intermediate seasons of spring and autumn the plants are frequently placed in their summer positions during the day, and it is desirable that they should be placed in their winter situations during the night. Our climate is so variable at those seasons that we not only have summer during the day, and winter during the night, but whole days of summer and winter alternating with each other. Sometimes we have warmer days in April than in May or June, and occasionally we have more severe frosts at the beginning of September than any which occur again till November is nearly over. Now, it is not the absolute heat or cold, but the rapidity of the transition from the one to the other, which is injurious to plants, and therefore it is absolutely necessary for all such as have their house plants in the perfection of beauty, to attend to those circumstances. This is more especially necessary in towns

where people are much less interested in the changes of the weather, and therefore much less observant of them, than they are in the country; and I have no doubt more plants are destroyed from want of attention in those variable periods of the year than from any other cause. It is a safe rule to trust no plant less hardy than a common Geranium outside the window all night earlier than about the 20th of June, or later than the 1st of September. No doubt there are many nights before the first of these times, and after the latter, during which the plants might remain in the open air without injury. There is, however, no knowing what a night may bring forth at those inconstant seasons, and therefore the safe plan is not to leave the plants to chance.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEK.

### KITCHEN GARDEN.

THE weather still continues favourable for all out-of-doors operations. The thermometer has fallen to the freezing point once or twice during the week, but the days have been mild. Much of our time has been taken up with wall-nailing and pruning the pyramid and other fruit trees on borders specially devoted to their culture. As they have been under summer pruning, all that is required at this season is to thin-out the branches where they are overcrowded.

We had a very heavy crop of fruit last season. Apples were most abundant, nor has the fruit ever kept better than it has done this year. The fruit-room faces south, and being an upper storey is rather dry, so that where the fruit had not been quite ripe when gathered it has shrivelled a little. Of course there are some varieties of Apples which shrivel more readily than others; for instance, the true old Golden Pippin will keep in good condition longer than the Pitmaston Golden. Ribston and King of the Pippins do not become soft even under unfavourable conditions. Cox's Orange Pippin will keep a very long time, but if the fruit is not quite ripe when picked it also becomes soft. When it is desirable to preserve a quantity in good condition, and the fruit-room is not well adapted for them, it is a good plan to wrap each fruit separately in a piece of soft paper, placing a layer of fruit in the bottom of a box or barrel; this layer is then covered over with dry sand, then another layer of fruit, which is covered with sand in the same way, and so on until the box or barrel is filled. It is not necessary to look over the fruit very often, as should any of the specimens decay the sand will, to a considerable extent, prevent the mould from spreading.

All the trees are well furnished with buds, but we do not expect those that were overcropped to bear another full crop next season. The borders are being dressed with rotted frame manure, and will be dug over with a fork just deeply enough to break-up the surface. Some persons recommend the borders not to be disturbed by fork or spade. We fancy digging lightly is beneficial to the trees: the borders have a tidy appearance after being dug, and the hoe can be more readily worked when weeds appear.

It is highly desirable to stir the ground amongst all green crops with the hoe, not so much to destroy weeds as to aerate the ground.

Lettuce planted in cold frames, and which is now ready for use, should be kept free from decaying mouldy leaves, and have the lights removed whenever the weather is mild, shutting-up closely at night. Made a sowing of early Peas on Dec. 23rd, the ground in splendid order. Our two favourite sorts are Alpha and Taber's Perfection [Sangster's No. 1], to which are added this year William I. and Blue Peter; both were grown last year for the first time. The last-named is the best dwarf blue pea, and William I. will displace all the other early Peas for exhibition purposes. The haulm is generally thin at the bottom, and as an experiment equal quantities of seed of Blue Peter and William I. were mixed together; the dwarf sort will fill-up the bottom part and thus utilise space.

### FRUIT AND FORCING HOUSES.

Pines may now have a higher night temperature—65° as a minimum, with a bottom heat of 85°. As the temperature is increased a little more atmospheric moisture will be beneficial to the plants, but no water should be put in the evaporating-troughs as yet. We find it necessary to examine carefully all plants that are throwing-up fruit, and to ascertain the state of the roots; if the soil is very dry it is best to thoroughly saturate it with water, and not to give any more until the soil is again comparatively dry.

Cucumber houses require a good deal of attention at present. The night temperature ought not to fall below 65° even in cold nights after this time. Thrips and green fly are troublesome, but tobacco smoke applied on three successive evenings soon clears the plants of them. The leaves being tender at this season, it is better to smoke oftener than to run the risk of destroying them. The pipes in our houses are well supplied with evaporating troughs, but experience has taught us that too much vapour is injurious, it causes the foliage to be waiting in sub-

stances and unhealthy. During the late spring and summer months the troughs may always be supplied with water.

**Mushroom beds** should be in full bearing now, and to keep-up a supply other beds should be in progress. We fancy the best Mushrooms are produced when, say, a fourth part of cow manure is added to that from the stables. It should be thrown together and allowed to heat until the rank steam is thrown off. The manure must be sheltered from the rains, which at this season would be injurious. If it should become too wet it will be improved by being spread-out about 9 inches deep on the floor of an open shed before throwing it up in a heap. The manure ought to be moderately moist at the time the bed is made-up, and should be rammed down quite firmly, which prevents overheating. The spawn may be inserted when it is found the temperature of the bed will not exceed 85° or 90°. It is not desirable to water the bed until the Mushrooms appear, when a moderate watering of tepid water should be applied. In all cases 2 inches of maiden loam should be placed over the surface of the bed and beaten down firmly with the back of a spade. Fifty-five degrees is the best temperature at which the house should be maintained.

**Dwarf Kidney Beans** in pots where the temperature is 65°, unless due precautions are taken, will become infested with red spider. To keep this pest in check syringe the under sides of the leaves every morning, and do not allow the soil in the pots to become dry.

**Asparagus Forcing.**—Where there are heated pits no difficulty should be experienced in keeping-up a supply of this vegetable. Shallow beds with two or three rows of pipes for hot water in the bottom are well adapted to maintain the temperature of the beds; about 18 inches of stable manure and leaves should be placed over the pipes, and when the heat has declined to 85°, the clumps of Asparagus roots should be planted on the bed. The temperature of the house may be 50° at first, rising, as the crowns show signs of moving, to a minimum of 60°.

When dung beds are used for forcing this vegetable there is always much danger of the roots being damaged by too much heat; and when the first heat declines applying linings of fermenting manure often involves considerable labour.

#### STOVE AND GREENHOUSE.

**Stove.**—There is now a paucity of flowers. Bouvardias of sorts are invaluable for cutting; they require a cool stove. If the plants are removed to a greenhouse when in flower, they must not remain there too long, as the young branches die-off with the cold. *Urceolina aurea* is a very distinct stove plant; its clusters of drooping yellow flowers are very ornamental, and the effect is much enhanced if they are grouped with specimens of *Aphelandras*. But perhaps the most useful of all winter-flowering plants is *Dendrobium nobile*. A set of plants of this are kept in a cool house—a lateinery where the atmosphere is dry suits them best—and at intervals of two weeks remove a few plants to the stove, and in this way a succession of bloom may be kept up from December until June.

**Greenhouse.**—The most valuable subjects at present are the different varieties of the *Camellia*; the large handsome flowers of different shades standing out against the bold glossy dark green foliage cannot be surpassed. When cultivated in pots there is always danger of the plants becoming unhealthy, or the complaint is made that the buds drop-off. The most frequent causes of these evils are over-dryness at the roots or in the atmosphere of the house, or stagnant water at the base of the roots, caused by the drainage being choked. The fleshy roots of the *Camellia* are easily injured, and the first signs of anything being wrong is the flower-buds dropping off. If any of the plants are infested with scale the leaves will be dirty; they should then be washed with soap and water.

**Epacris** and the winter-flowering species of *Caps Heaths* are very valuable for cutting; they require to be well attended to as regards the root-supply of water, the ball should be thoroughly moistened when water is required. Sometimes a plant standing near a flue or hot-water pipes will be over-dry, and the ball will part from the sides of the pot; when this is the case the ball should be rammed-in rather firmly, and the pot soaked in water for half an hour.

**Specimen plants** of Stage and Fancy *Pelargoniums* must now have the shoots trained regularly over the plant; those intended to flower late should be stopped. Smoke the house if only one green fly is to be seen, water cautiously at the roots. The variegated section require very little water during the present month. Allusion has lately been made to the mould or damp on Chinese *Primulas*. Ours are very badly affected. The only way to save the plant is to remove the fungoid growth with the fingers, and apply fresh-slaked lime to the injured part. Prompt action is necessary.

#### FLOWER GARDEN AND SHRUBBERY.

No better weather could be desired to forward all operations in this department. All shrubs, especially evergreens, should have been planted by this time. If any work of this sort remains yet to be done no delay should be made. It is highly desirable that the plants be established before frosts come. A

mulching of rotted manure over the roots is of much use in warding-off frosts. Roses ought also to be planted-out before the new year comes in.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

J. Hill, Spot Acre, Stone, Staffordshire.—*Catalogue of Forest Trees, Shrubs, Roses, Fruit Trees, &c.*

J. Carter & Co., 237 and 238, High Holborn, London.—*Carter's Vade-Mecum, 1874.*

#### TO CORRESPONDENTS.

\* \* We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

**BOOKS (B. W.).**—If you need only the names and short descriptions of plants and the orders they belong to, Loudon's "Hortus Britannicus" will suit you.

**SUPPLEMENT (F. H. K.).**—When we give extra pages we call it a supplement. You have mentioned goldfinches and bullfinches, but have not finished your query.

**ENCROACHING TREES (Welby).**—The courteous mode of proceeding is to ask your neighbour to lop-off the branches overhanging your garden. If he refuse to do so, you may lop them. As to the roots, you may cut them off as far as they penetrate your soil, but no further.

**CLIMBERS FOR VARIOUS PURPOSES (Rosa).**—The *Bougainvilleas* will do in a water temperature of 45°, or occasionally 40°, if kept dry at the roots. Climbers for covering the chais which support a 40-foot pole are *Jasminum nudiflorum*, *Caprifolium Periclymenum*, *Clematis Vitalba*, and climbing *Roses* *Dumee Rambler*, *Amadis*, and *Rampante*. Some of the best *Clematises* are *Alexandra*, *Henryi*, *lauguinosa nivea*, *Lucie Lemoine*, *Mrs. James Bateman*, *Star of India*, *Jackmanni*, and *rubro-violacea*. A few climbers for a greenhouse—*Bignonia jasminoides splendens*, *Kennedy bimaclata variegata*, *K. iuophylla floribunda*, *K. Marryat*, *Lapageria rosea*, *Mandevilla suaveolens*, *Passiflora* *Courtesii*, *Nesselrode*, *Rhyuchospermum jasminoides*, *Jasminum grandiflorum*, *Tacsonia Van-Volxemi*, *Hoya carnosa*, and *Sollya linearis*. A few climbers for a hothouse or stove—*Allamanda cathartica*, *A. Hendersonii*, *Cissus discolor*, *Clerodendron Balfourii*, *Dipladenia crassinoda magnifica*, *Ipomoea Horsfallii*, *Passiflora Decaisneana*, *P. princeps*, and *Stephanotis floribunda*. Flowering stove plants—*Anthurium Scherzerianum*, *Aphelandra aurantiaca Roezli*, *Burchellia capensis*, *Centropogon Lucaeana*, *Dalechampia Roezliana rosea*, *Eranthemum pulchellum*, *Eucharis amazonica*, *Franciscia calycina major*, *Gardenia radicans major*, *Ixora acuminata*, *I. coccinea superba*, *Lasiandra macrantha floribunda*, *Medinilla magnifica*, *Pentas carnea*, *Rondeletia speciosa major*, *Thysanotus rutillus*, *Euphorbia jacinthiflora*, and *Poinsettia pulcherrima*.

**TREES AND SHRUBS FOR EXPOSED POSITION (E. M. P.).**—The best trees for an exposed position are the *Sycamore*, and the *Corsican* and *Austrian Pine*, *Mountain Ash*, *Bird Cherry* (*Cerasus Padus*), and common *Elder*. With these as screens or as a screen you may so break the violence of the winds from the west as to grow to the east of them, and under the shelter of the above, a great variety of shrubs; but in the absence of particulars we are unable to advise.

**CHRYSANTHEMS AFTER FLOWERING (Idem).**—Cut away all the old shoots close to the ground, and take the cuttings when 3 or 4 inches long, and pot them singly in small pots, and keep them in a cool house until rooted, and then remove them to a cold frame until April, when they may be shifted into larger pots, and in May may be placed out of doors in an open sunny spot.

**CAMELLIAS FOR COOL HOUSES (F. T., Dublin).**—The lead-to houses which you propose to construct against your existing houses, and which when finished will have northern aspects, will not, if unheated, be suitable for *Camellias*, but if heated they would answer admirably. Without heat we fear you would not be able to give the needed stimulus for a good growth and thorough ripening of the wood. On the front stages of such a house you would be able to grow *Azaleas* and a majority of greenhouse foliage plants. Unheated, your houses would suit the hardy kinds of Ferns, which in their multitudinous forms are very fine. If you cannot heat the proposed structures, any unsightliness of the walls might be overcome by covering them with Ivy.

**PRUNING PYRAMID PEAR AND APPLE TREES (E.).**—The "lateral fine spray growing out of the various main branches and leaders" should be cut back to two eyes, and the shoots produced in consequence next season should be stopped at the third leaf, and afterwards to one leaf, unless they are wanted for extension; then they should be allowed to make six or more leaves before being stopped, stopping again at the third leaf. Had the shoots been stopped to three leaves they would not now have needed cutting-back. Pinch them well in summer, and little or no winter pruning will be necessary.

**ARRANGING STAGING OF GREENHOUSE (M. B.).**—Your house being a lean-to 5 feet wide, with a Peach tree against the back wall, you will only be able to have staging in front of the house, and that, to do justice to the Peach tree, should not be more than 2 feet 6 inches wide, and flat. There may also be at the back of the house a shelf about 1 foot 9 inches wide, 2 feet 3 inches or so from the floor, formed of laths, so that it can be removed as required for top-dressing the soil about the Peach tree. The plants on the stage should

not be large, or they will shade the lower part of the back wall, and the Peach tree will not thrive.

**DESTROYING SLUGS (*H. K. J.*).**—One remedy would be to take off the surface and burn it, as doing so would destroy not only the slugs but their eggs. Unless the land is strong we do not advise this, as we find that repeated applications of lime, fresh or newly slaked, are a perfect cure. It should be applied at the end of the day or early in the morning, making the ground quite white, and repeat the application every week or ten days, and best after rain. The ground, between the dressings, ought to be stirred with a hoe or fork. Your case being a bad one, we advise sowing the flower as well as kitchen garden with salt in March, evenly broadcast at the rate of twenty bushels per acre, following with the lime as may be requisite.

**PLANTS UNDER TREES (*G. C.*).**—As you wish for a few Ferns, we may say that it is only the commoner kinds that will succeed, and those not well unless the soil is moist. The most suitable Ferns are *Lastrea Filix-mas*, *Athyrium Filix-femina*, *Lastrea dilatata*, *Blechnum Spicatum*, *Polystichum aculeatum*, *Scolopendrium vulgare*, and *Polypodium vulgare*. Other plants are *Hypericum calycinum*, *Periwinkle* of sorts, *Primroses*, *Lily of the Valley* in places not densely shaded, also *Violets*, *Snowdrops*, *Winter Aconites*; and shrubs, such as common Laurel, Tree Box, *Anacardus*, *Mahonia* or *Berberis Aquifolium* and *repens*, *Butcher's Broom*, *Lanstrinus*, *Holly*, and *Ivies*, which are probably the finest of all subjects for growing under trees.

**WINTER DRESSING FOR FRUIT TREES (*Idem*).**—The object being to destroy vermin, use paraffin oil mixed with an equal proportion of soft-soap solution, 4 ozs. to the gallon of water, and apply it from the fall of the leaf until the buds begin to swell in mild weather. It must not be applied after the buds have swelled. They may be dressed with 8 ozs. of soft soap to a gallon of tobacco juice, the juice being heated to 160°; and the soft soap thoroughly dissolved, applying it at a temperature of not less than 90°, nor exceeding 140°.

**CASE FOR TRICHOMANES (*S. A. B.*).**—The case should be lined with zinc, and not only that, but have a loose or false bottom of perforated zinc, which should be placed 1 inch above the bottom, and the latter should have a small pipe and thumb-screw, so that water draining from the soil may be removed at pleasure. The sides, ends, and top of the case should be of glass, and the ends should open. The drainage should be placed on the perforated zinc, and consist of an inch or two thick of pieces of stone, and over it some rough pieces of peat should be laid to keep it from choking. Use from 4 to 6 inches of soil, but 3 will suffice; it should consist of fibrous, spongy, brown peat, and a third of freestone or sandstone, with a little silver sand, placing pieces of sandstone on the surface. The plants should be potted rather high, and the interior of the case must always be moist. If they have enough the fronds will have dew-like drops on the fronds every morning.

**SEA SAND FOR STORING BEET—HEAT FROM LEAVES AND DUNG—CLEANING VINERY (*C. S.*).**—Sea sand answers for the storing of Beet, Parsnips, and Artichokes, but it should be dry, and is then as good as, or better than, pit sand. The heat of a well-made hotbed of leaves and dung will endure a considerable time, but is liable to diminution of temperature after it has been made from a month to six weeks, it being necessary to renew the heat by linings—that is, when a uniform and continued temperature is required, as in growing Cucumbers or Melons. It will answer without linings for raising plants from cuttings or seeds; but if to be used continuously for that purpose, the heat will need to be renewed by linings. All the woodwork of a vinery ought to be washed with soap and water, and the glass with clear water, for which the garden engine is very suitable, but the dirt on the glass will need to be dislodged by a brush or sponge, and then driven off with water from the engine.

**CAMELLIAS MILDEWED (*Constant Subscriber*).**—No wonder your plants are mildewed when, as you say, the leaves are seldom dry. The low situation and surroundings of the house are such as are favourable to fungi; but could you not have gentle fires, so as to render the house drier, air being given freely? If the plants are very close together the distance should be increased, and the moisture may be kept under by admitting air more freely, leaving a little on at night; but gentle fires will be necessary to secure the required temperature, and in dull periods to promote a circulation of air. With this we do not think you will have mildew. It may be destroyed by dusting with flowers of sulphur, through a muslin bag or old stocking, the parts which are attacked.

**WEIGHT OBTAINABLE OF EARLY GRAPES (*An Old Soldier*).**—An ordinary greenhouse, 12 feet by 16, only heated sufficiently to preserve plants in winter, will not produce Grapes early, but now and then good Grapes which might ripen about August are obtained. Allowing, therefore, that plants are cultivated in the house, which necessitates a portion of the glass being kept clear of foliage, you might, perhaps, produce from 80 to 100 lbs., but it is difficult to say with anything like certainty what ought to be grown in such a position; so much depends on the management. If, however, your purpose is to compete in the market with others, we would not advise you to attempt to ripen your Grapes too early unless the heating apparatus, the situation, and other conditions are favourable. The attention required, as well as the price of coals, will leave you but a poor chance to compete with the professional grower, who has large houses contrived expressly for early forcing.

**FERTILISING SANDY SOIL WITH LIQUID MANURE (*An Old Soldier*).**—Soil of the description you name is the most benefited by liquid manure. Some years ago a friend occupying a plot of such land on the top of a hill, and which under ordinary treatment produced scarcely anything, by dint of deep cultivation and the free application of manure, both solid and liquid, contrived to have for his horses some of the heaviest crops of Lucerne, Clover, Bye, Tares, and other green foods which we have seen. Much the same may be done for cows, but we would not advise you to give the cows Cabbages, as they taint the milk, and it is now too late to sow or plant anything likely to be of use in the spring, unless it be Cabbages. We would therefore recommend the ground to be deeply cultivated, taking care if the surface soil is shallow to keep it still to the top, but disturbing the subsoil as much as possible to allow of deep-rooted plants, like those mentioned, descending in search of food. You might try a small portion of it in grass, but unless well watered it does not do well on dry soils. Better try the Vetches, Saintfoin, Tares, Clover, &c., which all withstand dry weather better.

**GLASS HOUSE FOR VINES AND BEDDING PLANTS (*A Constant Reader*).**—Your plan cannot well be improved, unless it be by the addition of T iron-bars as supports to the glazing-bar between the principal rafters, which would otherwise sag in if of greater length than 6 feet. Your plan of ventilation at top by bag-in is also good, but we would adopt a somewhat different arrangement in front, and have the pillars immediately underneath where the rafters are. This, however, is of little consequence, as you contemplate having the front lights made to open, and the easiest mode of doing this is to hang them

on hinges at the top. The pipes for heating might be about 18 inches from the front wall inside, and the Vines planted in that space, the roots being allowed to run outside and inside. As you contemplate only having two pipes, we would recommend them to be both together in the front, as the heat will ascend well enough, and the house being a lean-to, the top will always be warmest. We fear the Peach tree on the back wall will not do much good, as the Vines will speedily occupy all the glass and deprive the back wall of light. You might, however, plant a Vine or two against the back wall; they would compete with those on the roof for the light, and you might get a few bunches from them for a year or two, and if necessary one or more might be trained from the top down the rafter. We have seen Vines do very well where so treated. There is no better Grape than Black Hamburgh, but you might also have Buckland Sweetwater or Foster's White Seedling, but let most of the Vines be Black Hamburgh. If you know of any house near you similar to that which you intend building, we would recommend you to inspect it first, and make inquiries whether improvements could not be effected. You will obtain more information about details by such means than can be given in a column of letterpress, and in general you will find gardeners not only willing but pleased to impart information. We are sorry your communication has been unavoidably delayed.

**FLOWERING CINCERARIAS EARLY (*P. Q.*).**—They may be flowered in autumn and early winter, the seed being sown in March in a hotbed, and the plants grown-on throughout the summer in cold frames, shifting them into their blooming-pots in August, and removing them in September to a light airy position where they will have a temperature of 45° to 50° from fire heat. If kept in an ordinary greenhouse they will not flower until the new year. We have some now in a greenhouse at 40° to 45° that were sown last March, and the flowers are just expanding.

**ROW FROM A QUART OF PEAS (*Idem*).**—A quart of early Peas will sow a row 100 feet long, but as the early crops have greater vicissitudes of weather, and wet and cold soil to contend against, we sow rather more thickly, allowing a quart to 90 feet. A quart of the large kinds as the Wrinkled Marrows, will sow a row 120 feet long, allowing for casualties.

**PROPAGATING POMMIER DE PARADIS STOCKS (*G.*).**—These will strike root from cuttings of one or more years' old wood, but are best of two or three years' growth, inserted two-thirds their length in moist soil, and about 8 inches apart. The cuttings should be 9 or 10 inches long, and all the eyes ought to be removed except the three uppermost. They should have a warm soil, as from our experience this stock is not suited for the Apple in bleak elevated situations and northern parts of this country. The cuttings should be put in from November to February inclusive. Layers are the best mode of propagation, make stouter stocks in a shorter time, and, consequently, sooner fit to be worked than those from cuttings or suckers. The layers should be made from November to February.

**COVERING CROCUS BULBS WITH SOIL (*P. D. W.*).**—We have never grown our Crocuses with the bulb on the surface, or partly covered with soil, but always cover them with soil 1½ to 2 inches deep, which we consider quite deep enough for those grown in pots. Even Hyacinths we bury up to the neck, entirely covering Tulips and Narcissuses. The Celery you mention as being sent to us by book post has not reached us; and judging from what you say, we do not think the caterpillars, beyond the injury to the leaves, will have done the Celery any harm. A Melon frame should face the south, but will answer if facing south-east, but the former aspect is to be preferred.

**PASSE COLMAR PEAR NOT RIPENING (*Q. Q.*).**—This Pear ripens very well with us in the neighbourhood of London as a pyramid on the Pear stock. In cold districts it would require a wall. With us it is now in season. As it does not succeed on your wall, we advise you to re-graft it with some other sort. It likes a rather dry warm soil; if grown on unsuitable soils the flesh is gritty.

**PANSIES AND VIOLAS (*Idem*).**—Write to Mr. Ware, of the Hale Farm Nurseries, Tottenham.

**APPLE TREE WITH BARK PARTING FROM THE TRUNK (*E. M. M.*).**—Remove all dead bark with a sharp knife, and wrap haybands round the trunk.

**NAME OF FRUIT (*J. Hill*).**—We do not recognise your Shropshire Apple. It is a fine variety for culinary use, and as it is an almost unailing bearer, ought to be more known.

**NAMES OF PLANTS (*Kildare Subscriber*).**—*Contautrea candidissima*. (*H. Hicks*).—We cannot name plants unless their flowers are sent; nor did we ever hear of the name "Creeping Myrtle."

## POULTRY, BEE, AND PIGEON CHRONICLE.

### THE PAST AND THE PRESENT YEARS.

CERTAIN subjects get old; and if we had to deal with them only, we should shrink from the fact we had nothing new to relate or to chronicle, that our best efforts would be "as tedious as a thrice-told tale," and that we should do well to let the time and opportunity pass.

But there are other and better things that are always new, and which we believe we have in common with the rest of mankind. There are seasons when it is impossible to think of passing time without serious feeling. Thus, when year after year we approach the subject of the new one, we neither wish to nor can repress a feeling of gratitude that we have been spared so many years to report upon the past and to hope for the future, to avoid the shipwrecks in that which is beginning by using largely the experience we have gained in times past.

We have no need of a profession of faith; our ideas and opinions are known, and we are proud to say they are approved. We have no new flag to hoist. For many years we have endeavoured to hold an even balance, to spare no criminal from "fear, favour, or affection," to charge no innocent one from "hatred or malice." The confidence of our friends, and a constantly-increasing circulation with its attending prosperity, embolden us to speak as we do. While we do not hesitate to say this much for ourselves, yet as we know the greatest military

talent would be useless on an emergency without men or stores, so we know nothing that we could do would avail unless we were supported by our subscribers and readers. To them we tender our hearty thanks.

In treating of poultry, and of those pursuits that are connected with it, we have to view it in a light comparatively new, but one that increases daily in importance. Poultry and Rabbits are producing large quantities of food, and will produce more. In the teeth of the fact that food is daily increasing in price, that it is admitted to be scarce, we cannot ignore the evidence that the amount hitherto raised only induces us to consider how much more may be done by painstaking and judicious selection; also by a larger amount of encouragement given to those classes that are food-providers contributing both weight and quality. It is often to be regretted that shows seem organised more with a view to bring together birds that are admirable for feather rather than food. The question is so important that it cannot fail to bring itself forward; and when it is seen that poultry now enters into the consumption of the artisan's household and into the feeding of the people, it is worthy the consideration of all, that they may devise the means by which increased production may be attained. Taking the question of Rabbits when they are imported by the ton, of eggs counted by hundreds of millions, of Geese and Turkeys by thousands, consuming a great part of the produce of Picardy and Normandy, we cannot help asking ourselves whether some of the many thousands of pounds paid for these things may not be kept at home, or whether, viewing these things as trivial, we do not allow the idea to rob us of the energy and perseverance that are the characteristics of our race. In this short notice we do not purpose to go into the question, but it must be done at some future time.

A review of the poultry year is made easy and comparatively unimportant by the exhaustive articles that constantly appear in our columns. It would appear that many of the weight-making birds have nearly reached the possible limit. Among these we may class Ducks, Geese, Turkeys, and fowls. We do not say that some may not at times be exhibited of enormous weight, but as an average we doubt if they will still increase. The judgment of the public has been as usual correct in the treatment of the French breeds, and that which has before happened has repeated itself. The *La Flèche*, popular as they are in the district which gives them their name, have been fairly and anxiously tried, and found wanting. They will not acclimatise. The Houdans and Crève-Cœurs not only hold their own—they improve greatly, and we doubt whether those bred in England could not successfully compete with their foreign brethren. For those who detest a broody hen, and do not care for chickens, the introduction of these birds is a boon, and as they become well known in their properties and requirements, which they do a few years after their introduction, they can be profitably kept. The size of the eggs they lay is a great advantage. Among the breeds that have hardly remained stationary may be classed the Spanish. Their properties are so similar to those of these French breeds, that it may fairly be supposed some who took to the French forsook the Spanish.

Hamburgs have certainly improved during the past year. Malays have taken an onward and upward stride. We are glad of it. These old and meritorious servants have been too long in the cold shade of public neglect. Aylesbury Ducks are falling off in numbers and weight, while the Rouens flourish in both particulars. We suppose fashion is not confined to costume or apparel; it has its influence on poultry. Many years since there were large and long classes of Sebright Bantams. Their merits were so even that they were the plague of the judges. Merits were magnified, and defects dwelt upon in order to come to a decision. Now it is difficult to get a dozen together. Then the Black and White were bred to marvellous perfection. They, too, have dipped their flag to the Game. The numbers in which these birds are shown are very great, and exhibitors have realised that it is necessary to show Game Bantams, differing only in size from their larger brethren.

Most attractive classes have sprung up in those for Carolinas, Mandarins, and other varieties of wild fowl. The numbers of the first two in their separate classes, all of startling beauty, and in perfect plumage, formed at Birmingham one of the most beautiful sights ever seen. The varieties showed birds in a perfect state of domesticity, which some years ago were known only to "hardy explorers," or through books.

The year has been a pleasant one for those engaged in poultry. Without being exceptionally favourable for rearing, the difficulties of temperature were not insuperable. There has been a ready sale for almost all sorts. Shows have been well supported in every way, but some alteration will be required with some of them. The pursuit must still be made a holiday for ladies, and a thing in which they take a personal interest. We are truly grateful we have only to do with these ordinary things. We have no abuses to expose, no threatenings to publish, no complaints to make.

When we think of those with whom we are brought in weekly contact, our thoughts have to do with friends only. We summon

them in imagination; we view them with our mind's eye, and warming with the contemplation, we suit the action to the thought, and, holding out our hands, wish to all our friends, and subscribers, and contributors

A HAPPY NEW YEAR.

## POULTRY JUDGES.

HAVING been an ardent admirer of poultry for the last fifteen years, and a successful breeder and exhibitor at most of our large shows for the last twelve years, I look upon the controversy now going on upon the above subject as one of great importance to all fanciers, and I agree with the Rev. E. Bartrum in saying that with so many new shows springing up, and the number of qualified judges diminishing, it behoves everyone to bestir himself and do his best to avert such a calamity. I confidently recommend to committees of poultry shows Mr. Samuel Burn, of Whitby, who has been a breeder of nearly every variety from his youth, and a prizewinner at all of the great shows; in addition I know from experience that his heart is thoroughly with the fancy, and nothing gives him greater pleasure than to meet his brother fanciers and have a chat about their pets. Of his ability to judge all varieties I have no doubt, and I am convinced that whatever committee will give him a trial will be thoroughly satisfied. I may here mention that Mr. Burn was engaged as one of the Judges at the North of England Show held at Whitehaven last January, and his awards gave such general satisfaction both to exhibitors and the public, that the local newspaper speaks of him thus:—"Mr. S. Burn made his first appearance here, but if we may judge from the expressions of satisfaction on all sides with his awards, it will not be his last."—EDWARD FEARON, *Whitehaven*.

## BAD FASTENINGS OF POULTRY BASKETS.

FROM time to time I read in your Journal complaints from exhibitors at shows, of their birds having been stolen or exchanged, either at the show or on the journey to or from, and no wonder after what I saw a few days since. On the Reigate town railway platform there were two new close-woven wicker-work baskets, about 40 inches deep, with lids to correspond, but without any handles—all most suitable; and yet how were they fastened? One loosely with a very thin piece of string; the other also loosely, with one piece of string rather thicker than the other, but half worn through. Each lid might be easily lifted up 2 inches, and if roughly lifted by the lid the strings would, without doubt, have given way. I called the attention of the railway porter to the fact, and presently a youth came and put to each basket two or three more fastenings of *thin twine*, and these baskets were going in this state to the Lewes Poultry Show, and would have one or two railway changes to make before arriving there. Is it, then, to be wondered at that birds are lost if sent in such a careless way? The senders have no ground of complaint if birds are sent back on their return journey equally carelessly packed.—W. D. P.

[We can fully sustain our correspondent's statement. Exhibitors complain of losses, and too often charge them to the carelessness of the show or railway officials, whereas the exhibitors have taken no proper care to employ either efficient baskets or efficient fastenings.—*Ens.*]

## BROMLEY POULTRY SHOW SCHEDULE.

ALLOW me to call attention to what I consider an important omission in connection with this schedule, I mean the absence of the names of the members of the Committee. The prize list is a very liberal one, and if it do not produce a good entry I am sure it may be attributed to this cause, as exhibitors like to know that they are trusting their birds to gentlemen of experience in poultry-keeping, and that their birds will be properly cared for; and further, it is only natural that, after paying their entry fees, they should feel a little anxious to know who is responsible for the payment of the prize money.—AN EXHIBITOR.

## HATCHING DUCKLINGS LATE.

MANY readers of the Journal have, no doubt, often heard it said that young Ducks hatched after midsummer will not live. Many, too, have probably accepted the saying as true without putting it to a practical test. I, at least, know not only of some persons taking a great interest in poultry, but also of some very good farmers who have done so. One farmer with whom I am acquainted, who is well known for his good farming, and who by no means despises poultry as a source of profit on his farm, would as soon think of attempting to rear ducklings in October or November as of attempting to make a crop of hay in March. Indeed, I know as a fact that, although his Ducks lay an abundance of eggs each autumn, he will not use them for sitting purposes, but sends them into the market for sale at the same price

as his hens' eggs. To all persons who have believed the adage above referred to, I would say, Put it to the test of its truth at the first opportunity; for I feel sure that, having once done so, they will not in future abstain from trying to rear ducklings late in the year, but that they will, on the contrary, try to rear as many as they can. To sit them on Ducks' eggs is an excellent way of making use of the hens which fall broody in the autumn; for it not only affords the birds a rest, but it also prevents their time from being wasted. I have tried the plan myself, and I find that it succeeds very well; indeed I must admit that its success has exceeded my expectations. Hens thus employed, even if not allowed to sit, would not lay during the winter months; but the rest obtained during the period of incubation will bring them to lay again early in the following spring. As regards the ducklings I find but little difficulty—I may even, perhaps, say no difficulty—in rearing them. I can usually obtain Ducks' eggs enough about the middle of September, so that I have my young birds hatched about the middle of October. By the last week of December or the first week in January they are fit to kill, and at such a season they will, if I desire to sell them, realise a good price.

My plan is this: The hens being broody—I prefer rather lightly-built short-legged Cochins for the purpose—I take the freshest Ducks' eggs that I can possibly obtain, and place nine or ten eggs under each hen. The nests are made of soft straw upon an ample foundation of dry earth or finely-sifted coal ashes. This foundation not only aids cleanliness, but also serves to keep up a uniform warmth. For some few days before the time for hatching expires I sprinkle the eggs once a day with warm water, and sometimes I do not hesitate, even though it be autumn, to plunge the eggs into a bucket of such water a day or so before hatching, allowing them to remain there some few minutes. From nests of eggs thus treated I have had a duckling for every egg, and the broods are usually good in point of numbers. The young birds, too, are generally strong, and once hatched I seldom lose one by death. At first they are fed upon oatmeal, ground oats, or barleymeal, slaked with water and made rather thin, and as they grow older upon corn, which is placed in shallow pans of water. For some few days they are not allowed to enter any water, except such as they find in these pans, and at no time are they permitted access to a pond or any other large piece of water, but are confined to a trough or a small pool. Treated in this manner they thrive well and rapidly, making fine birds about the period already named. I may add that the birds should be housed at night, and it will be all the better for them if they are well littered down with clean straw.—R. W.

## MANCHESTER POULTRY AND PIGEON SHOW.

FROM its long-continued success this Show now stands in the first rank: and the thirteenth annual Exhibition, held from the 24th to the 27th December, was such as to well maintain its high position. The honourable and methodical manner in which everything relating to previous meetings has been carried out, was followed to the letter during last week's Exhibition; and as the Messrs. Jennison are an enterprising band of young men, by no means willing to be left behind in catering for the wishes of a sight-seeing public, this season for the first time a fat cattle show was added, the management of which deserved equal credit with that of the dog and poultry shows. We cannot but allude briefly to the excellent arrangements for this new feature. In a permanent building, 100 yards long and of proportionate height, with thorough ventilation, and marked by extreme cleanliness, were placed the cattle, sheep, pigs, roots, and vegetables, the animals being all supplied with an abundance of excellent straw, and in stalls of such ample size that most of our show committees would do well to imitate them. As the stock entries, it appears, comprised most of the principal show animals in the kingdom, we feel assured the future patronage of the owners of such stock may be relied on. From this digression we must now return to the poultry. We confess our own opinion is decided, that the division of the poultry into three portions, the intermediate spaces being allotted to dogs, proved the very opposite to an improvement. It should be borne in mind that amateurs and breeders of poultry are by no means of necessity passionate admirers of the canine race, and being thus forced to pass backwards and forwards among the dogs does not add to the satisfaction of those persons whose predilections point exclusively to the feathered tribes. Most probably, after having given it this year's fair trial, the plans of former years will be restored.

In *Dorkings*, Coloured, Manchester very far surpassed any show of the present year, all the classes being thoroughly good throughout; although in the class for any other variety of *Dorkings* except Coloured and Silver-Greys, only a single pen of Whites was entered, and this, though good, was not of unusual excellence. Of Grey *Dorking* cockerels there were twenty-six pens, all but one present, and with such excellence throughout as to render this one of the most notable classes in the Show. We were glad to notice in these, as in all the other classes for *Dorkings*, perfect feet were the order of the

day—scarcely a gouty or bumble foot was to be seen. As to the *Dorking* pullets and hens a more worthy or even lot has rarely been brought together, the Dark-feathered, now so esteemed, proving their customary superiority when handled for closer inspection. In *Silver-Greys* were to be found some of the truest-plumaged specimens seen for many years, a few excellent-shaped though otherwise faulty-feathered cocks being among them. The *Spanish* classes were abundantly filled with grand specimens, the hens and pullets being the most praiseworthy. Of *Buff Cochins* there was a really first-class display. As a rule, however, the adult cocks proved in the worst show-trim that could well be imagined, some of the grandest birds of the day being penned in so thoroughly exhausted a condition from over-showing as to imperil their existence. It was a very remarkable feature of the Show that only two pens of *Buff* hens were entered—both, however, very good. In the pullet class *Lady Gwydyr* was successful with a pair of the best shown and matched birds we have seen for some years. Although so many of the finest of the pullets were to be found in this class, it was a fault that many had twisted hackles—a grave objection, and one that develops itself still more as time goes on. As this failing is difficult to breed-out, careful breeders will avoid them when selecting brood-stock. *Partridge-feathered Cochins* were in force, and the rich brilliancy of condition of the plumage of many of them was most noteworthy. Whites were also by no means the least deserving of praise among the *Cochins*, many among the hens or pullets being the very types of what is desired in this admired variety. Both *Dark* and *Light Brahmas* were very fine specimens, constituting large classes, and almost without exception of good quality. There certainly has not on any previous occasion been so excellent a display of *Polish* at Manchester as there was this year. In fact even the prize birds at Birmingham could not hold place here against new comers. All the *French* breeds were capital, and the entries of these varieties were unusually heavy. Of *Game* fowls the *Brown Reds* were decidedly the best shown, and the faultless condition of the majority was beyond question. On the other hand, but few of the *Game Bantams* were in the robust health desirable in show birds. In the *Extra* variety class were four pens of *Black Cochins* well worthy of note, and some especially perfect-feathered ones of the *Cuckoo* variety.

The *Geese*, *Ducks*, and *Turkeys* were marvels as to size, but in a hasty glance along the Reuen Ducks several very characteristic traits were wanting. As customary at *Belle Vue* shows, the class for *Ornamental Waterfowls* was of an extremely interesting character. Among some twenty-one pens, the most notable entries were *Cereopsis Geese*, *African Purple Gallinules*, *Casarka Ducks*, *Mandarins*, *Carolinans*, *Chilian Pintails*, *Garganics*, *Pintails*, *Pochards*, and many others. So covetable were they, as a lady visitor expressed herself, "she could not tell which she liked best, for she should want them all."

A correspondent gives the following as the weights of the prize *Turkeys*—viz., First-prize old cocks, 36 lbs.; second-prize (American), 39 lbs. 11 ozs. First-prize old hens, 37 lbs. 3 ozs.; Mr. Lythall's unnoticed pen, weight 41 lbs.

**DORKINGS** (Coloured, except *Silver-Grey*).—*Cockerel*.—1, J. Longland, Grendon. 2, J. Walker, Rochdale. 3, Miss Davies, Chester. 4, J. Stott, Healey, Rochdale. 5, J. Longland; W. Cople, Preston; Mrs. F. S. Arkwright, Sutton Seabrook; Mrs. T. W. L. Hind, Kendal. 6, Lieut. Col. H. B. Lane, Brackley, Abingdon. 7, T. Statter, Stoke Park, Hants. 8, J. F. S. Arkwright, 2, R. Price, Rhiwlas, Bala. 3, Mrs. T. W. L. Hind. 4, T. N. Leyland, Ruthin. 5, J. White, Warley (2); Miss Davies. 6, J. Cople, Eccleston, Preston.

**DORKINGS** (Coloured, except *Silver-Grey*).—*Cock*.—1, Lieut. Col. H. B. Lane. 2, W. Cople. 3, J. Longland. *Hens*.—1, Mrs. F. S. Arkwright. 2, J. Longland. 3, J. White. 4, L. Pilkington, Wines. 5, Lieut. Col. H. B. Lane. 6, T. Statter.

**DORKINGS** (*Silver-Grey*).—*Cock*.—1, W. W. Rutledge, Kendal. 2, T. Raines, Bridgehaugh, Stirling. 3, T. Statter. *Hens or Pullets*.—1, Wren & Page, Lowestoft. 2, T. Raines. 3, W. W. Rutledge.

**DORKINGS** (Rose-combed, or any other variety not before named).—1, J. Robinson, Garstang.

**SPANISH**.—*Cock*.—1, W. R. Bull, Newport Pagnell. 2, Burch & Boulter, Sheffield. 3, Furness & Sudall, Rawtenstall. *Hens*.—1, J. Leeming, Broughton, Preston. 2, Mrs. Tonkin, Bristol. 3, T. Paterson, Langholm. 4, J. Sillicote, Wotton, 5, J. Bampton, 6, J. Bampton, Newchurch, Manchester.

**SPANISH**.—*Cockerel*.—1, J. Leeming. 2, F. James, Peckham Rye. 3, J. Barry, Westbury-on-Trym. 4, J. T. Parker, Northampton; C. R. Kay, Haverbrack, Minthorpe; W. Jarrett, Bristol; J. Boulton, Bristol. *Pullets*.—1, J. Gliddon, Bristol. 2, J. T. Parker. 3, W. R. Bull. 4, Burch & Boulter; F. James; Fallister & Hawkins, Thirsk (2); J. Clews, Walsall.

**COCHIN-CHINA** (Cinnamon and Buff).—*Cock*.—1, W. A. Burnell, Southwell, Notts. 2, W. A. Taylor, Manchester. 3, Lady Gwydyr, Stoke Park, Ipswich. 4, W. A. Taylor; W. A. Burnell; H. Lucy, Hebban Bridge. *Hens*.—1, W. A. Taylor. 2, J. Lee, Middleton. *Pullets*.—1, Lady Gwydyr. 2, W. A. Taylor. 3, E. Thomas, Didsbury. 4, Lady C. Moreton, Tiverton Court; W. A. Taylor. 5, W. Whitworth, Longsight.

**COCHIN-CHINA** (Brown and Partridge-feathered).—*Cock*.—1 and 2, T. Stretch, Ormskirk. 3, J. A. Taylor. 4, Mrs. Wood, Brinall, Chorley; J. A. Taylor. 5, J. Fowler, Askebury; H. Lacy. *Hens*.—1, T. Stretch. 2, M. M. Cashmore, Shephard, Longborough. 3, J. A. Taylor. 4, T. Aspden. *Pullets*.—1, W. A. Taylor. 2, T. Stretch. 3, J. K. Fowler. 4, J. A. Taylor; D. Monison, Bradford. 5, C. W. Brierley, jun., Middleton.

**COCHIN-CHINA** (White).—*Cock*.—1 and 2, W. Whitworth, jun. 3, Lady Gwydyr. 4, W. A. Burnell. *Hens or Pullets*.—1 and 2, W. Whitworth, jun. 3, Lady Gwydyr. 4, W. A. Burnell.

**BRAMA** (Poona).—*Cock*.—1, W. A. Taylor. 2 and 3, H. Lacy. 4, F. J. Fowler, Birmingham; Horace Lingwood, Creeting; Rev. A. Van Stanzenze, Tettenhall. 5, J. H. Jones, Handforth; F. Bennett, Shifnal; H. Lacy; C. Leyland; W. H. Crabtree, Levenshulme; G. Maples, jun., Wavertree. *Hens*.—1, Horace Lingwood. 2, J. H. Jones. 3, T. F. Ansell. 4, T. F. Ansell. 5, St. Helen's. 6, F. J. Cotterell; Hon. Miss D. Pennant, Penrhyn Castle, Bangor; Mrs. E. Wilkinson, Greenheys; Mrs. F. S. Arkwright; H. Lacy.

**BRABRA Pootra (Dark).—Cockerel**—1, Horace Lingwood. 2, D. Moulton. 3, J. Lyon. 4, L. Wright, Crouch End, Horsaey. *he*, J. Lyon, Sutton, St. Helens; C. Holt, Rochdale; J. Walker, Newcastle, Staffs. *he*, Hon. Miss D. Pennant; J. L. Malden, Lincoln; E. Pritchard, Tettenhall. *c*, F. J. Cottrell; D. Moulton; Hon. Miss D. Pennant; R. Swan, Lincoln. **Pullets**—1, L. Wright; 2, Horace Lingwood. 3, Mrs. F. S. Arkwright. *he*, J. Lyon; T. F. Ansdell; L. Wright. *he*, Rev. H. Beckston, Hope Vicarage, Sheffield; Hon. Miss D. Pennant; E. Kendrick, jun. 1, Lichfield; J. Swan; E. Pritchard; Mrs. F. S. Arkwright; W. Harreaves, Bacup. *c*, W. A. Taylor.

**BRABRA Pootra (Light)**—1, Horace Lingwood. 2, Rev. N. J. Ridley, Newbury. 3, M. L. Markyte, Markyte Street. *c*, C. Layland, Warrington; T. A. Dean, Malden, Hereford.

**BRABRA Pootra (Light).—Cockerel**—1, T. A. Dean. 2, P. Haines, Palgrave, Diss. 3, F. J. Cottrell. 4, J. H. Butler, Erdington. **Pullets**—1, W. B. Crahtree. 2, P. Haines. 3, Horace Lingwood. 4, T. A. Dean. *he*, W. Hartley, Hipperholme; M. Leno.

**POLISH.—Cock**—1 and 3, G. C. Adkins. 2, P. Unsworth. *he*, J. Fearnley, Lowton; G. C. Adkins, Birmingham; T. Dean; P. Unsworth. Lowton; J. Robinson; W. Taylor. **Hens or Pullets**—1 and 3, G. C. Adkins. 2, W. A. Taylor. *he*, G. C. Adkins; W. Speight, Chorlton-cum-Hardy; W. Silvester, Sheffield; J. Robinson; H. Beldon; W. A. Taylor. *c*, P. Unsworth; G. C. Adkins.

**CREVE-CEURS.—Cock**—1 and 3, R. B. Wood, Ulloxeth. 2, W. Dring, Faversham. *he*, J. Robinson. *he*, Mrs. E. Cross, Appleby Vicarage, Brigg; W. R. Park, Melrose; W. Conlank, jun., Littleport; J. Walton, Croxson; J. K. D. Quibell. *c*, J. L. Malden. **Hens or Pullets**—1, W. R. Dring. 2, W. A. Taylor. 3, J. Mortimer, Ross. *he*, R. B. Wood. *he*, S. & J. H. Fielden, Todmorden; J. J. Malden, Biggleswade.

**HORDANS**—1, B. Heald, Mapperley Plains. 2, W. Dring. *he*, Mrs. E. Wilkinson. *he*, G. W. Hibbert, Godley; R. B. Wood; J. Swan; W. Whitworth, jun. *c*, D. Lane, Hardwick, Gloucester. **Cockerel**—1 and 2, R. B. Wood. 3, J. E. Fowler. 4, W. Dring. *he*, J. Archer, Wootton Bassett. **Pullets**—1, W. D. Quibell. 2, B. Heald. 3, J. E. Fowler. 4, B. Heald. *he*, J. French, Melton Mowbray; W. Whitworth, jun.; W. D. Quibell.

**GAME (Black-breasted Red).—Cock**—1, J. Jeken, Eltham. 2, C. Chaloner, Whitwell, Chesterfield. 3, T. P. Lyon, Liverpool. **Hens**—1 and 2, W. J. Pope, Biggleswade.

**GAME (Black-breasted Red).—Cockerel**—1, S. Field, Ambroden, Bicester. 2, G. E. Peach, Shifnal. 3, Hon. and Rev. F. Dutton, Windrash Rectory. *he*, E. Moss, Hurst, Ashford; J. W. C. Okeley, Atherstone; J. E. Fletcher; Stoneclough; J. Godsell, Stroud. *c*, S. Mather, Stowmarket. **Pullet**—1, W. J. Pope. 2, J. Mason, Worcester. 3, Mrs. H. Ashton, Prestwich. *he*, J. Fletcher; W. J. Pope.

**GAME (Brown and other Reds, except Black-breasted).—Cock**—1, T. Mason. 2, T. P. Lyon. 3, S. Matthew. *he*, C. W. Brierley. *c*, W. Brierley, inn; H. E. Martio, Senthrope; J. Forsyth, Wolverhampton. **Hens**—1 and 2, W. Brierley, jun. 2, E. Mano, Walfield, Stand. *he*, T. P. Lyon; C. W. Brierley; J. Poole, Ulverston.

**GAME (Brown and other Reds, except Black-breasted).—Cockerel**—1, J. Carlisle. 2, J. Wood, Wigan. 3, S. Skidmore. *he*, J. Chesters, Nantwich; C. H. Wolf, Hale, Altrincham; J. Fletcher; T. Chesters, Nantwich. *c*, Morria and Woods. **Pullet**—1 and 2, C. H. Wolf. 2, T. Chesters. 3, J. Wood. *he*, J. F. Walton, Horncliff, Rawtenstall; Rantwell & Barrow, Kendal; W. Watson, Andlem, Nantwich; F. Sales, Crowle; J. Poole; T. Mason, Lancaster.

**GAME (Duckings and other Greys and Blues).—Cock**—1, A. Beck, Gulesfield, Welshpool. 2, C. Chaloner. *he*, E. Bell, Burton-on-Trent; J. Goodwin, Liverpool. **Hens or Pullets**—1, J. Goodwin.

**GAME (Any other variety).—Cock**—1, C. W. Brierley. 2, W. Scotson, Little Byrom. *he*, T. P. Lyon. **Hens or Pullets**—1, F. Sales. 2, C. W. Brierley.

**DUCKS (Rouen).—Drake**—1, J. Scotson. 2, J. Walker. 3, R. Gladstone, jun., Court Hey, Liverpool. *he*, J. Scotson; T. Statter. *c*, W. Evans. **Ducks**—1, A. Haslam, Hindley Common, Wigan. 2, W. Wakefield, Gollerton, Newton-le-Willows. 3, J. Scotson. *he*, J. K. Fowler. 2, T. Statter.

**DUCKS (White Aylesbury).—1 and 2, J. Walker. 3, J. K. Fowler.**

**DUCKS (Black East Indian).—1, Rev. J. G. A. Baker, Old Warden, Biggleswade. 2, J. Walker.**

**ORNAMENTAL WATERFOWL**—1, H. B. Smith, Broughton, Preston. 2, Mrs. F. S. Arkwright (Carolina). 3, M. Leno. *he*, Rev. E. H. Lucas, Edith Weston, Stamford (Cecropia). *he*, H. B. Smith. *c*, H. B. Smith.

**GEESSE (White).—Gander**—1, J. K. Fowler. 2, J. Walker. *he*, Capt. L. Anyon, Whittle-Woods. **Goslings**—1, J. K. Fowler. 2, J. Walker. 3, J. Storry. *he*, R. Hutchinsall, Littleborough. *c*, T. Statter.

**GEESSE (White).—Pair**—1, J. Walker. 2, J. K. Fowler. **Goslings**—1, J. Walker. 2, J. Lycett, Stafford.

**GERAP (Grey and Mottled).—Gander**—1, J. Walker. 2, T. Statter. **Goslings**—1, J. White. 2, S. H. Stott, Preston. 3, J. K. Fowler. *he*, T. Statter; J. Lycett.

**GERAP (Grey and Mottled).—Pair**—1, J. K. Fowler. 2, J. Lycett. *he*, J. White. *c*, S. H. Stott. **Goslings**—1, F. E. Rawson, Thorpe, Halifax. 2 and 3, C. Lycett. *he*, T. Statter.

**TURKEYS.—Cock**—1, J. Walker. 2, E. Kendrick, jun. 3, Rantwell and Jarrow. **Cockerels**—1, J. Walker. 2, F. Lythall, Offchurch. 3, E. Kendrick, jun. *c*, W. Wykes.

**TURKEYS.—Hens**—1, M. Kew, Market Overton. 2, E. Arnold, Willefield, Bambridge. 3, F. E. Richardson. *he*, J. Walker. W. Wykes, Wolvey, Hinckley. **Poulters**—1, F. Lythall. 2, J. Walker. 3, W. Wykes.

**EXTRA STOCK**—1 and 2, W. & T. Holt, Church (Black and Cuckoo Cochins). 3, G. E. Sanden, Sutton Crosshills, Leeds (White Leghorns). Extra, R. Hawkes, Seaham (Malays). *he*, W. A. Taylor (Andalusians); J. F. Walton (Malays); J. H. Oppenhaw, Stand, Manchester (Malays); T. Aspdon; T. A. Bond, Londonberry (Black Cochins); J. Swan (Japanese Clean-legged Silkies imported); J. Watts, Birmingham (Silky Frazzles). *c*, H. Frankland (Black Cochins).

**HAMBURGERS (Black).—Cock**—1, T. W. Holmes, Baildon. 2, H. Beldon, Goitstock. 3, H. Hoyle, Lamb, Newchurch. *he*, J. M. Kilvert, Wem; N. Marlor, Denton.

**HAMBURGERS (Black).—Hens or Pullets**—1, Rev. W. Serjeantson. 2, H. Beldon. 3, J. H. Howe. *he*, J. M. Kilvert; E. Brierley; T. W. Holmes; J. Lancashire; N. Marlor; J. Bowness; Rev. W. Serjeantson. *c*, J. Lancashire, Chadderton; Rev. W. Serjeantson; M. M. Cashmore.

**HAMBURGERS (Golden-spangled).—Cock**—1 and 2, W. A. Hyde, Hnraton, Ashton-under-Lyne. 3, T. Blakeman, Tettenhall. *he*, J. Buckley, Taunton, Ashton-under-Lyne; G. & J. Duckworth, Church; H. Beldon. *c*, J. Buckley; H. Broadhead, Holmfirth; T. Walker, jun. (2).

**HAMBURGERS (Golden-spangled).—Hens or Pullets**—1, W. A. Hyde. 2, G. & J. Duckworth. 3, J. Buckley. *he*, J. Buckley; J. Thorpe, Little Hoot, Middleton; H. Broadhead; J. H. Howe (2); J. Bowness. *c*, J. Ogden, Tong; T. Dean.

**HAMBURGERS (Silver-spangled).—Cock**—1, Ashton & Booth, Mottram. 2 and 3, J. Fielding. *he*, Duke of Sutherland, Trentham; H. Beldon. *c*, Ashton & Booth.

**HAMBURGERS (Silver-spangled).—Hens or Pullets**—1 and 3, Ashton & Booth. 2, J. Fielding. *he*, J. Robinson, Lindley, Olney. *c*, J. Fielding; J. Robinson, Garstark.

**HAMBURGERS (Golden-pencilled).—Cock**—1, J. Robinson. 2, H. Beldon. 3, J. Walker. *he*, H. Smith, Newton, Hyde; R. H. Ashton, Mottram.

**HAMBURGERS (Golden-pencilled).—Hens or Pullets**—1, J. Walker. 2, J. Bowness. 3, G. & J. Duckworth. *he*, Barch & Boulter. *c*, T. Wrigley, jun.

**HAMBURGERS (Silver-pencilled).—1, J. Lee. 2, Duke of Sutherland. 3, J. Robinson. *c*, H. Beldon; J. Bowness.**

**GAME BANTAMS (Black-breasted Red).—Cock**—1 and 3, J. Eaton, Grantham. 2, J. Blamires, Great Horton. 4, J. R. Fletcher. 5, G. Hall, Kendal. *he*, Capt. Wetherall, Loddington, Kettering; J. R. Fletcher, Stoneclough; E. Newbitt,

Edworth. **Hens or Pullets**—1, E. Newbitt. 2, W. F. Entwistle, Bradford. 3, G. Hall. *he*, Capt. Wetherall; G. Hall; G. Maples, jun. *c*, H. J. Edge; R. Swift. **GAME BANTAMS (Brown-breasted Red).—Cock**—1, W. F. Entwistle. 2, F. Hughes, Heavily, Stockport. *he*, S. & J. J. Stephens, Ebley, Stroud. *c*, J. Mayo, Gloucester; S. Beighton, Farnfield. **Hens or Pullets**—1, S. Beighton. 2, W. F. Entwistle. *he*, S. & J. J. Stephens; W. Adams, Ipswich.

**GAME BANTAMS (Duckings).—Cock**—1, S. Beighton. 2, J. Eaton. *he*, E. Payne, Cardiff. **Hens or Pullets**—1, W. F. Entwistle. 2, G. Hall. *he*, E. Cope, Eadingly, Southwell.

**GAME BANTAMS (Any other variety).—Cock**—1, W. Steel, Halifax. 2, Hall and Adams, Brimley; J. T. Barker, Brimley; R. Brown, Kirkcaldy. *c*, J. Blamires. **Hens or Pullets**—1, W. F. Entwistle. 2, J. R. Fletcher.

**BANTAMS (White).—1, H. Beldon. 2, Rev. F. Tearle, Gazeley Vicarage. *he*, W. A. Taylor.**

**BANTAMS (Black).—1, W. H. Shackleton, Bradford. 2, R. H. Ashton. *he*, W. A. Taylor (2); R. H. Ashton; H. Beldon.**

**BANTAMS (Any other variety).—1, S. A. Wyllie, East Moulsey (Pekin). 2, M. Leno (Laced). 3, N. Cook, Chesholt (Silver Sebright). *he*, Mrs. Woodcock, Leicester (White Japanese); M. Leno (Laced). *c*, R. Wharm (Speckled Booted); Rev. W. Serjeantson (Dark Japanese).**

#### PIGEONS.

**PORTERS (Blue or Red).—Cock**—1, W. R. Rose, Kettering. 2, E. Horner, Harewood. 3, R. Fulton, New Cross. *he*, R. Fulton; G. J. Taylor, Huddersfield. *c*, R. Fulton; G. J. Taylor. **Hens**—1, R. Fulton. 2, W. Harvey, Sheffield. 3, R. Fulton. *c*, E. Horner.

**PORTERS (Any colour except Blue or Red).—Cock**—1 and 2, H. Pratt, Knowle. 3, R. Fulton. *he*, W. R. Rose; R. Fulton. *c*, E. Horner. **Hens**—1, G. J. Taylor. 2, Mrs. Ladd, Calke. 3, R. Fulton. *c*, Mrs. Ladd; R. Fulton.

**CARRIERS (Black).—Cock**—1, G. J. Taylor. 2, R. Fulton. 3, *he*, E. Horner. **Hens**—1 and 3, R. Fulton. 2, E. Horner.

**CARRIERS (Dun).—Cock**—1 and 3, R. Fulton. 2, E. Horner. *c*, J. Stanley. **Hens**—1 and 3, R. Fulton. 2, E. Horner. *he*, J. Stanley, Blackburn.

**CARRIERS (Any colour except Black or Dun).—Cock**—1 and 2, R. Fulton. 3, W. E. Nalder, Brunswick Street, London. **Hens**—1, W. E. Nalder. 2 and 3, R. Fulton.

**CARRIERS (Young).—1 and 3, R. Fulton. 2, E. Horner. *c*, S. Daniels, Stockport.**

**DRAGOONS (Yellow).—1 and 3, F. Graham, Birkenhead. 2, G. South, New Bond Street, London. 3, W. Hill, Handforth. *c*, R. Fulton.**

**DRAGOONS (Blue).—1, F. Graham. 2, W. Hill. 3, W. Markland, Deace, Bolton. DRAGOONS (Any other colour).—1 and 3, R. Fulton. 2, F. Graham. *c* and *he*, G. South.**

**ANTWERPS**—1, W. Gamon, Chester. 2, C. F. Copeman, Birmingham. 3, R. Brierley, Fishpool, Bryn. *he*, G. B. Goodfellow, Hyde. *c*, A. Bingham, Manchester; W. Gamon; A. Justice, Salford.

**JACOBS**—1 and 3, R. Fulton. 2, J. Thompson, Bingley. *he*, J. Thompson. E. Horner; G. J. Taylor. *c*, G. South.

**BARBS**—1, F. Wild, Hyde. 2 and 3, R. Fulton. *he*, E. Horner. *he*, F. Wild; J. Stanley; R. Fulton. *c*, H. Yardley, Birmingham; J. Baily, jun., Mount St. John.

**FANTAILS (White).—1, Rev. W. Serjeantson, Acton Burnell. 2, W. Hill. 3, J. F. Lovelands, Newark. *he*, J. Walker; H. C. Bowman, Higher Broughton; Rev. W. Serjeantson.**

**FANTAILS (Any colour except White).—1, 2, and 3, H. Yardley. *he*, T. Randall, Guildford; W. Hill; F. H. Paget, Birstall; Major Cryer, Southampton.**

**TUMBLERS (Almond).—1 and 2, R. Fulton. 3, H. Yardley. *he*, E. Horner. BEARDS OR BALDS.—1, R. Fulton. 2 and 3, W. Woodhouse, Lynn. *he*, W. Woodhouse; G. South; W. Hill.**

**TUMBLERS (Any other variety).—1, H. Adams, Beverley. 2, J. Fielding, jun., Rochdale. *he*, J. W. Harling, Burnley; G. J. Taylor.**

**NUNS**—1, W. Croft, Killinghall. 2 and 3, E. Horner. *he*, Rev. A. G. Brooke, Shrawardine Rectory; W. Harvey.

**MAGPIES**—1 and 2, E. Horner. 3, C. G. Hitchcock, Oxford. *he*, T. Randall; R. Fulton.

**TURKS**—1, W. Croft. 2, S. Salter. 3, J. G. Orr, Beith. *he*, W. Croft; J. Fielding, jun.; A. Mangnall, Withington; R. Fulton.

**SWALLOWS**—1, E. Siddall, Rawtenstall. 2, W. Hill. 3, J. Baily, jun. *he*, W. Harvey; E. Horner; J. Baily, jun.

**ARCHANGELS**—1, W. Harvey. 2, E. Horner. *he*, J. C. Boothby, Stockport; H. Yardley.

**OWLS (English, Blue or Silver).—1, 2, and 3, R. Clay, Andenshaw, Manchester. *he*, E. Laid, Nantwich; R. Clay; A. Mangnall; G. E. Saddon, Sutton Crosshills, Leeds.**

**OWLS (Foreign).—1, F. Wild. 2, R. Fulton. *he*, J. Fielding, jun. RENTS**—1, T. D. Green, Saffron Walden. 2, S. Salter, Egrove. 3, H. Yardley. *he*, T. D. Green; S. Salter.

**TRUMPETERS**—1 and 3, R. Fulton. 2 and 3, W. Harvey. **ANY OTHER VARIETY**—1, R. Fulton. 2, H. Yardley. 3, A. Silvester. 4, W. Hill (Swifts). *he*, A. Silvester; Mrs. R. B. Wood (Ice); F. H. Paget (Swifts); W. Harvey (2).

**JUDGES.—Poultry.—Dorkings, Cochins, Extra Stock, and Bantams, except Game: Mr. E. Hewitt, Sparkbrook, Birmingham; Spanish, Brahmas, Crève-Cœurs, and Houdans: Mr. R. Teebay, Fulwood, Preston; Game: Mr. J. H. Smith, Skelton Grange, York; Polands, Hamburgs, and Game Bantams: Mr. J. Martin, Bridgnorth; Ducks, Geese, Turkeys, and Ornamental Waterfowl: Mr. H. Castang, London. Pigeons.—Pouters, Carriers, Dragoons, Antwerps, Jacobins, and Barbs: Mr. P. H. Jones; the remaining Classes: Mr. T. J. Charlton, Bradford.**

#### HECKMONDWIKE POULTRY SHOW.

This was held in the Drill Shed, Heckmondwike, on December 26th.

**GAME.—Black-breasted.**—1, E. Aykroyd, Eccleshill. 2, W. Fell, Adwalton. **Reds.**—1, J. Fortane, Morton Banks, Keighley. 2, J. W. Thornton, Bradford. *he*, S. & W. Sheard, Hightown; C. Carr, Wilsden, Bingley; W. Fell, Adwalton. **Duckings, Grey and Blue.**—1, H. Bealand, Bradford. 2, E. Aykroyd.

**COCHIN-CHINA.**—1, W. Mitchell, Birkenhead. 2, C. Carr, Wilsden, Bingley. *he*, R. Poppleton; C. Carr; H. Firth, Bradford.

**BRABRA Pootra.**—1, W. Schaffel, Birkenhead. 2, W. Mitchell, Birkenhead. *he*, W. F. B. Birkenshaw. 2, C. Carr.

**HAMBURGERS—Gold and Silver-spangled.**—1, C. Carr. 2, W. Kellett, Birstall. *he*, J. Smith, Gilsted, Bingley. **Gold and Silver-pencilled.**—1, C. Carr. 2, J. Smith. *he*, E. Clayton, Keighley; J. Anderton, Gilsted, Bingley.

**SPANISH—Black.**—1, C. Carr. 2, W. Jagger, Horbury Bridge. **ANY OTHER VARIETY.**—1, C. Carr. 2, J. Smith.

**ANY BREED.**—Cock—1, J. Smith. 2, W. Thornton, Bradford. 2, J. Hodgson, Bradford. **Hens**—1, E. Aykroyd. 2, C. Carr.

**GAME BANTAMS.**—Red—1 and 3, G. Noble, Staincliffe. *Any other variety.*—1, F. Naylor, Heckmondwike. 2, J. Blamires, Great Horton.

**BANTAMS.—Black.**—1, C. Carr. 2, F. Holt, Staincliffe. *White, or any other variety.*—1, C. Carr. 2, E. Clayton.

#### PIGEONS.

**CARRIERS.**—1, B. Rawnsley, Goltstock, Hingley. 2, E. Booth, Southill, Batley

ANTWERPS.—1, F. Holt, Staincliffe. 2, B. Rawnsley.  
 TUMBLERS.—1, J. Furness, Staincliffe, Dewsbury.  
 OWLS.—1 and 2, A. Smith, Southwam, Halifax.  
 POULTERS.—1, J. Furness, Dewsbury Moor.  
 DRAGONS.—1, E. Burnhill, Cleckheaton. 2, G. Hargreaves, Dewsbury.  
 TURBITS.—1, G. Hargreaves.  
 FANTAILS.—1, B. Rawnsley. 2, F. Holt.  
 BARNS.—1, B. Rawnsley.  
 COMMON.—1 and 2, B. Rawnsley.  
 CANARIES.  
 NORWICH.—Yellow or Buff.—1, L. Belk, Dewsbury.  
 BELGIAN.—1, G. Birkhead, Bickersfield. 2, L. Belk.  
 YORKSHIRE.—Evenly-marked Yellow or Buff.—1, L. Belk. 2, G. Birkhead.  
 Unevenly-marked Yellow or Buff.—1, W. Whitaker, Dewsbury. 2, L. Belk.  
 Yellow or Buff.—1, W. Whitaker. 2, H. Ellison, Dewsbury.  
 LIZARD.—Gold or Silver-spangled.—1, L. Belk. 2, G. Birkhead.  
 GOLDFINCH MULE.—Evenly-marked Yellow or Buff.—1, L. Belk.  
 CRESTED.—1, G. Birkhead. 2, L. Belk.  
 CANNON.—1, G. Birkhead. 2, L. Belk. Evenly-marked Yellow or Buff.—1, L. Belk. 2, G. Birkhead.  
 GOLDFINCH.—1, W. Whitaker. 2, L. Belk.  
 ANY OTHER VARIETY.—1, L. Belk. 2, W. Whitaker.  
 RABBITS.—1, J. Chappell, Dewsbury Moor. 2, J. Batley, jun., Staincliffe Bottom.

### WHITBY POULTRY SHOW.

The fourth annual Show was held in St. Hilda's Hall on December 30th.

DORKINGS.—1 and 2, J. White, Waraby, Northallerton.  
 COCHINS.—1, D. & J. Ibbotson, Whitby. 2, T. Readman, Whitby.  
 BRAHMA POULTERS.—1, Dr. Holmes, Chesterfield. 2, J. Watts, Birmingham.  
 SPANISH.—1, R. Newbitt, Epworth. 2, Fallister & Hawdies, Thirsk.  
 GAME.—1, W. Adams, Beverley. 2, J. Robshaw, Whitley.  
 HAMBURGS.—Golden-spangled.—1, T. Bonilton, Hanford, Stoke-on-Trent. 2, W. A. Hyde, Hurst, Ashton-under-Lyne. Silver-spangled.—1, J. Fielding, Newchurch, Manchester. 2, G. Speedy, Whitby. Golden-pencilled.—1, W. Clayton. 2, T. H. Readman. Silver-pencilled.—1, T. H. Readman. 2, G. Speedy.  
 ANY OTHER VARIETY.—1, J. Fielding. 2, C. Walker, Boroughbridge.  
 BANTAMS.—Game.—1, W. Adams. 2, W. C. Dawson, Whitby. Any other variety.—1, R. H. Ashton, Notram. 2, J. Watts.  
 DUCKS.—1, T. C. Carver, Langthorpe. 2, P. C. Bedlington, Whitby.  
 SELLING CLASSES.—1, T. C. Carver, Langthorpe, Boroughbridge. 2, J. W. Corner, Epton. Cock.—1, T. E. Satterthwaite, Castle Howard, York. 2, T. Blackburn, Northallerton. Hen.—1, J. Carr, Whitby. 2, T. H. Readman.  
 GEESE.—1, J. B. Braithwaite, North Otterington. 2, I. Wilkinson, Whitby.  
 TURKEYS.—1, J. B. Braithwaite. 2, T. C. Carver.  
 BARNDOR.—1, W. Cutlack, jun., Littleport. 2, E. Barker, Stokealeys.

#### PIGEONS.

TUMBLERS.—1, W. Adams, Beverley. 2, J. Hawley, Gillington, Bradford.  
 CARRIERS.—1, J. Hawley. 2, G. Sadler, Boroughbridge.  
 POULTERS.—1, J. Kilpatrick, Whitby. 2, J. Hawley.  
 FANTAILS.—1, J. F. Liveridge, Newark. 2, J. P. Fawcett, Whitby.  
 JACOBS.—1, J. Blanchard, Great Driffield. 2, R. W. Richardson, Beverley.  
 ANY OTHER VARIETY.—1, J. Ledderer, Bootle, Liverpool. 2, J. Hawley.  
 SELLING CLASS.—1, J. Hawley. 2, J. P. Fawcett.  
 BARNS.—1, J. Hawley. 2, R. W. Richardson.  
 MACPHEA.—2, J. Blanchard, Great Driffield.

JUDGES.—Poultry: Rev. T. Phillips, Robin Hood's Bay; Mr. W. Stonehouse, Darnholme; and Mr. J. Webster, Hawsker.  
 Pigeons: Dr. Alexander, Castleton.

### ROYAL DUBLIN SOCIETY'S POULTRY SHOW.

THIS Show, so far as numbers and quality went, was the best ever brought together by the exertions of the Superintendent. Every possible care was taken of the birds, and there was a class each for old and young poultry.

Silver-Gray Dorkings over a year old were a large and even class, the first prize going to a beautifully-coloured cock, but not so large as the second, which was of great size, but not of good colour. Many good birds were highly commended, and in the young class it was the same. In Coloured Dorkings the first and second prizes went to birds of giant-like proportions and proper colour, which cannot be said of their rivals, which were too like Silver-Greys. Among Spanish there were some fair specimens, the first-prize pen being nice and smooth in face; cauliflower birds were passed over. Light Brahmas are steadily increasing in favour in Ireland, and were a large class, but most of those shown were very defective in marking, the first and cup young birds being the only properly hackled pair, and they were good in all points, having the true Brahma shape and character, in which the others were rather deficient. The Dark were very superior, and contained many fine specimens, being of much better colour and shape than the Light. The first-prize adults were far ahead of the others; the hen, being remarkably well pencilled, carrying off the cup. The second were also a good pen, but the hen was not so well marked as the first-prize one. The young class contained many good and promising birds. These two classes were the best in the Show and hard to win in. The Buff Cochins formed bad classes, but the first-prize young birds were a grand pair in all points, and wonderful in colour and size. The first-prize Partridge cock was second at the Palace. Blacks had five entries for two classes—good for Blacks, the cup going to old birds. The prize young birds were those which were first at Oxford. All were of good colour, but wanting in shape and size. Of Game there were many good specimens, the first-prize Black-breasted and the first-prize Duckwings being all that could be desired in the adult class. Of Hamburgs there were few good birds, and Polish were poor. The prize French were good in colour and of large size. In the Variety class Sultans were first and Black Hamburgs second in the old section, and Scotch Greys first and second in

young. All Scotch Greys should retire to the dunghill; better have been seen there. Game Bantams were a good class; the first and second prizes went to large Game in miniature. Turkeys were of great size, but the smaller ones were the best in colour. Geese were very fine; the first and cup young birds were of great size. Of Rouen and Aylesbury Ducks there were very even classes, which gave the Judges something to do. Mandarin and Shelldrake were first and second in Ornamental Waterfowl.

Pigeons.—Pouters, except the winners, were only moderately good. Carriers were good classes, the winning cock and cup bird being good except in size; the second-prize cock was good, but "spouty;" the winning hens good. The first 1873 birds have the makings of grand birds, the second were over age. The winning Tumblers had good heads and beaks, Yellow and Yellow Agates. The first-prize Barbs were a wonderfully-developed pair of Duns; the second good Blacks, waiting age, when they will make their way. Young Barbs were very promising. In Fantails the winners were good in all points, especially fine in head and neck. For Red or Yellow Jacobins the first prize went to grand birds but of bad colour, the second running them closely, but of better colour. Jacobins of other colours were all Black, the winners grand in colour, and all that could be desired in other points. In Turbits good Blues were first and second, and Blacks and Yellows took the prizes for other colours, both being fine pens. The first-prize Trumpeters were a wonderfully-developed pair of birds, but those which took the second place were superior in colour. The first-prize foreign Owls were far ahead of their rivals, which were half-bred English and foreign. In Homing Pigeons the winners were Show Antwerps. Dragons contained some young Blue Carriers; Blues of a genuine type were first, Yellows badly matched in head, but of good colour, being second. The Blues had what I think shows the true Dragon—a black look in their eye wattle. Winning Nuns and Magpies were nicely marked and coloured birds. Runts and Swallows won in the Variety class. Without fear of contradiction it may be said that the Show, taking it altogether, was the best in quality and entries ever held by the Royal Dublin Society.

The Judges were Messrs. C. F. Staunton, J. Crosbie Smith, and H. Merry. The list of awards appeared at page 499.—S.

BURTON-ON-TRENT POULTRY SHOW.—I have a note from the Secretary stating that Mr. A. O. Worthington, after winning the cup he had given for competition in Light Brahmas, very considerably passed it over to the next winner, who was Mr. H. Chawner, of Hound Hill, Uttoxeter.—E. HUTTON.

LOWESTOFT POULTRY AND PIGEON SHOW.—The seventh annual Show of this well-conducted Society will be held on the 21st and 22nd of January, when twelve silver cups will be distributed in thirty-seven classes, as also three prizes and two local ones in each class. The Judges are the Rev. T. F. Fellowes and Mr. Hutton, and the entries close on the 6th inst.

### NOMENCLATURE OF PIGEONS.

IN remarking on the young Blue Carriers at Glasgow you mention one as "Silver Dun." If by this you mean "Mealy," I have nothing to say, except that the Antwerp breeders have originated two misnomers—namely, "Silver Dun" for Mealy, and "Red Chequered" for Mealy Chequered. If you mean Silver, the word "Dun" is not only superfluous but positively erroneous. Every solid colour has a corresponding colour barred by it—viz., Black has blue barred with black; Dun, silver barred with dun; Red, mealy barred with red; Yellow, buff barred with yellow. Therefore, if Silver Dun signify "silver barred with dun," Blue Black signifies "blue barred with black," Mealy Red, "mealy barred with red," and Buff Yellow, "buff barred with yellow." However, Blue Black, Mealy Red, and Buff Yellow (sometimes called "Mealy Yellow") signify a bad-coloured Black, Red, and Yellow respectively; Silver Dun therefore means a bad-coloured Dun. As the Antwerp breeders have, as I said before, wrongly appropriated the name, I trust that you will not make confusion worse confounded by calling a Silver "Silver Dun."—TURKEY QUILL.

[Our reporter must defend himself. If he erred, he erred in good company.—Ens.]

### POUTERS, ANY OTHER COLOUR OR MARKINGS CLASS.

THERE seems to be a growing inclination to do away with this class of birds at our shows, and some committees have already excluded it. I think this is a very great mistake, and one which will be found out when it may be too late. I have two main reasons for so saying. First, Young and poor fanciers are excluded; they cannot afford to buy standard birds, their stocks

are accounted worthless, and their aspirations as Pouter fanciers are nipped in the bud. We all know the feeling when first told of our success as prizetakers, and the pleasure we have at seeing our birds marked at the shows. Even a "commended" or "highly commended" is better than nothing, and if conscientiously so labelled, it must be esteemed a great step by a young or poor fancier, particularly at a large show. Many of us have had to fight our way up from a few birds of "Any other colour or markings," and why discourage others feeling their way in the same path? But, second, the committees who exclude this class surely do not know that they are striking at the root of some of our finest breeds. Those who can purchase a stock of standard birds must not think that they can perpetuate all the points; the strain will gradually dwindle down and die out. We must every now and then have something to put size into our strains, to give length of feather and length of limb, and that style which is imperative, besides keeping up the purity of colour. It is from the discarded class that all this is to be had. What better bird can be had than a Sandy for giving the Black-pied style and colour? Or a Mealy for killing the chequer marks on the Blue Pied, and in place giving that soft solid hue so much wanted? Or a Splash for adding size and length of limb to the Blue and to the White? Were it not for the Splash (any colour) our Whites would go out altogether, or, at all events, become small delicate birds not worth the keeping.

It is all very well for those who keep Pouters for exhibition to look with a cold eye upon this class, but we breeders have worked upon it before the first show was thought of, and had we not done so there would not have been the birds which are now being exhibited. I have heard some fanciers say they would kill every bird that was not up to standard marking, and if this were put into practice generally, there would, by-and-by, be no Pouters either to kill or show. We cannot do without this class, and it ought to be encouraged at all shows. Besides, in it there are often found some of the handsomest Pouters in the show, and we must recollect that it is neither colour nor marking, but shape, that constitutes the Pouter Pigeon. This class also often adds considerably to the amount of entry money, and I consider that committees who exclude it from their shows are not only damaging the Pouter fancy, but quarrelling with their bread and butter.—JAS. HUIE.

### NEW BOOKS.

*The Brahma Fowl.* By LEWIS WRIGHT. Third and Revised Edition. "Journal of Horticulture" Office, and Messrs. Cassell.

OCCASIONALLY—very occasionally—ones meets with people, usually the wrong side of seventy, who speak of anyone who goes to a poultry show as "gone to look at cocks and hens," or who connect Pigeons with "Blue Rocks 10s. a-dozen, gents;" these latter not the least the wrong side of seventy, but sporting striplings of, with them, the silly side of twenty. But putting aside such, there were many who, until our Crystal Palace shows and our handsome volumes on poultry and Pigeons, had no idea whatever of the striking beauty which was to be seen among these birds. The Crystal Palace Shows I regard as the educators of the English eye on poultry subjects. Other shows are held in places often out of the way and not architecturally pleasing, and consequently the world in general is absent; but one Crystal Palace Show is of more value in spreading further and further the love and culture of poultry and Pigeons than all the other shows of England put together. Everyone sees it advertised and thousands visit it; and I hope its promoters will give six prizes, or even eight prizes where they now give four, and make it the Derby of the poultry world, and its first prizes immeasurably beyond in esteem any other first prizes whatsoever.

I consider, then, the great Crystal Palace Show as the eye-educator of Englishmen in matters of poultry; and as a larger number of well-off people live near London than in any other neighbourhood, so we shall have a larger number of poultry, and especially Pigeon fanciers and exhibitors, resident within twenty miles of the metropolis.

But among the mind-educators of English people on poultry subjects stands first and foremost Mr. Lewis Wright. His style is pleasing. He begins a chapter in a way to catch the general reader and make him read on. A mere dry detailer of poultry points would and could never do this. It is not my province now to speak of Mr. Wright's greatest work; of that another time, when its last number has reached me. I speak this week of his second published work, and of that work's third edition. "The Brahma Fowl" saw the light in 1870; in eighteen months a second edition was called for, and now is issued a third. This is a sign of the times. Here is a volume which touches the pocket to the amount of five shillings, and treats of only one variety of poultry, yet which has had so rapid a sale. The sale has also, I believe, not been limited to England, but in America the work has been largely bought and read. I have spoken of the career of this work as a sign of the times: it is so in more respects than one. Fifty years ago no one would have been so

unwise as to publish a five-shilling work on any one variety of fowls, and if they had it would have never reached a third edition within its third year. If there had been such a one it would have been on fighting cocks, but not one on a gentle, home-loving, domestic bird like the Brahma. The times are changed, and the age of patronised cruelty is at any rate gone.

This third edition of "The Brahma Fowl" is like the first edition, and yet different. It is the same in size, shape, and has exactly the same number of pages and the same number of coloured pictures; but the pages are not the same, nor the pictures. The pictures in the first edition were good, but in this third they are better. Markedly so is the portrait of the Dark Brahma cock and the Dark Brahma hen; the latter is especially a lovely bird. There is a pleasant fact connected with "The Brahma Fowl," that it led to its author writing his great "Book of Poultry." Thus Mr. Wright tried his wings with the "Practical Poultry-keeper," strengthened them with "The Brahma Fowl," and soared away into full public favour with "The Illustrated Book of Poultry."

The Brahma is Mr. Wright's especial fowl; and although as yet, owing to limited accommodation for his pets, he has not been a large or general exhibitor, yet a large proportion of the winning chickens of the last two or three seasons have been bred on one side or the other from his strain, and a hen hatched from eggs supplied by him realised the largest sum of money given for any single hen of any breed during the last twenty years—viz., £20.

"The Brahma Fowl" treats fully on the subject indicated by its title, beginning with the origin of the Brahma, then speaks of its qualities and management, contrasts the Dark and Light varieties, and goes on to speak of breeding, rearing, and managing Brahmas, finishing with a chapter on judging them.

I always tell anyone desirous of taking to poultry, Adopt one variety—that which you fancy, and which those who understand the matter think your home is adapted for; and then read-up the subject and get your variety; and above all things, if you wish to succeed, stick to it. If Brahmas be your fancy—and if they are there will be smiles for you from your wife and children, or you will have eggs for breakfast when perhaps your neighbours have none; and the kitchen denizen or denizens, the maid of all work or the grand cook, will willingly save-up scraps and learn to help you, as they find what a kitchen friend for eggs and chickens is the Brahma. Let such a man or woman (ladies are excellent fanciers, indeed among the very best), with a Brahma turn get this work, read it hard, master its contents, and within the first season he or she will save its cost over and over again.—WILTSHIRE RECTOR.

*Pheasants for Coverts and Aviaries.* By W. B. TEOETMEIER. H. Cox, London.

THE eleven engravings are beautiful, including the species of Pheasant for use and ornament, known in this country; the paper is equal to drawing paper, and the binding handsome. The literary part is useful, but chiefly a compilation.

### HIGH-COLOURED CANARIES.

WE were very much surprised to see in your Journal that the receipt for breeding high-coloured Canaries belonged to Bemrose and Orme. We wish you to understand that we (Wright and Shaw, of Sutton-in-Ashfield), sold this receipt to Orme last year (1872), with an understanding that he was not to divulge it to anyone. We are very sorry to learn that he has deceived us. This year the birds exhibited by Bemrose & Orme principally have been bred and moulted by us.—WRIGHT & SHAW.

[We forwarded a copy of the chief contents of this note to Messrs. Bemrose & Orme, to which Mr. Bemrose replies as follows:—

"I beg to say Mr. Orme did purchase from Messrs. Wright the method of feeding that we adopted to obtain high colour, which I had known for years but I had never given the food in sufficient quantity. Mr. Orme, contrary to my wishes and unknown to me, told the method of feeding to a man named Bennett. I was not aware of this until some time after, but it eventually came to my knowledge that Bennett and Barnesby (to whom Bennett had told it) were writing to fanciers offering to sell the method adopted by us—in fact had sold it to several, amongst the number to Holmes, of Nottingham, who gave Barnesby £2 for it. Upon finding this out I at once wrote to you, deeming it the most straightforward course to pursue. I can only say I deeply regret Orme's conduct, and my having had any connection with the case.

"With regard to the latter part of Messrs. Wright's letter, stating 'that the birds exhibited by us were principally bred and moulted by them,' it is simply untrue. At the commencement of the season they had three variegated birds, which I thought would turn out well, but they have not done so. In order to obtain these we had to buy several others quite useless as show birds, having sold three of them myself as song birds for 5s. I am quite willing to admit all that is true, but must protest against

the latter part of their letter. The highest-coloured birds we have shown have been moulted by myself—I moulted ninety-eight, some of the best not having been yet sent out.—E. BEMROSE.

"P.S.—It is my intention at the close of the season to leave the fancy."

There is no need to pursue the subject further in our columns.—Eps.]

## THE BEE-KEEPER'S CALENDAR FOR JANUARY.

IN COMMENCING a calendar in *THE JOURNAL OF HORTICULTURE*, I will state that during the last few years a considerable advance has been made in apian science by a wide-spread section of intelligent bee-keepers. The granite of common sense is cropping-up to the surface in most of the counties of England, and it is on this foundation that all good and successful management in the past has been achieved. The progress made in practical bee-keeping of late is so perceptible, that I cherish the hope I may have the happiness of knowing that thousands of the rural population of England derive a substantial income from bee-keeping.

Some three months ago I received an invitation to visit a village in North Staffordshire. About a couple of hours after my arrival almost all the leading bee-keepers within five miles of the village came to spend the evening with me and my host in conversation about bees. Bee-keeping in that neighbourhood had made no progress from time immemorial till about three years ago, when a book of modern date on the practical management of bees fell into the villagers' hands. They now keep bees for profit, some having fourteen hives, some ten, some seven, and others four hives. I am happy to say that I never met more advanced and intelligent bee-keepers before or since.

If I have to pilot the steamer for twelve months, let me, before I mount the paddle-box, wish all the crew and passengers "A Happy New Year," and express my hope that we shall have fair weather, and a pleasant as well as a prosperous voyage.

### JANUARY.

If bees have food enough in their hives now, the less they are disturbed—indeed the quieter they sit amongst their combs, the better. Though all healthy hives are benefited by the bees taking an occasional airing in mild weather during the winter months, the inmates of healthy hives sit more quietly and closely together than those of unhealthy hives. On turning-up a hive infected with foul brood, we invariably find the bees sitting very loosely in it, and that they at once begin to spread themselves over the combs. On turning-up one of my own hives lately, I saw the bees act in this way, and suspecting the cause I applied some smoke to enable me to examine it thoroughly, when I found it extensively diseased. The bees will be shaken out of it into a hive of sweet combs some night this week.

Though September and October are the best time for feeding bees for the winter, many bee-keepers fail to give enough food at that season, and continue to feed them for months afterwards. Such late feeding is attended with the risk of inducing the bees to commence breeding, and the brood being chilled to death by frosty weather. There is also some difficulty in getting the bees to take food during cold weather, when they naturally seek warmth by crowding together. If necessary to feed in January, let the food when given be warm, say about 100°, or blood heat. If the bees will not take it, let them be brought into a hothouse or warm room, and there fed with warm syrup, keeping them in their hives. In such a case I pour the warm liquid over bees and comb, and keep them shut-up for twenty-four hours.

Is it necessary to ventilate hives in winter? No; the smallest door possible affords the bees air enough during winter. With wooden hives ventilation is an advantage, as the greater part of the moisture which (without ventilation), condenses on the insides of the hives and rots the combs, is carried through the ventilating holes. Where wood hives are used, the crown holes should be covered with fly-proof wire, and used as ventilating shafts; and where such hives have no crown holes, I have seen the combs saved by boring holes through the crowns and sides with gimlets and small brace-bits.

During the winter both honey and bees should be protected from house and field mice; during the summer they need no protection from such robbers, but in winter bees sit so closely together in the centre of their hive, that mice frequently enter without molestation and devour the honey in the outside combs, and will even kill the bees and afterwards eat their heads off. How the sagacious mice manage to take bee by bee from the mass and carry them outside the hives without being stung is a marvel; but they do it. I have known many hives nearly ruined by mice eating the heads of the bees, and leaving the bodies in heaps outside. To prevent these depredations we contract the doors of the hives in winter by using pieces of wood with doorways in them, sufficiently large to permit bees to carry out their dead, and small enough to exclude mice.

As wet and cold are hurtful to bees, I may here refer to the protection from these needed in winter. It has been stated by

some one that bees die in a temperature of 34°—that is to say, when the mercury falls to within 2° of the freezing-point inside a hive, bees cannot live. I have not yet put this to the test of experiment, but if it is a fact, the importance of covering bees well in winter cannot be too highly insisted on. The best and neatest covers for hives which I have ever seen were some I lately noticed in Staffordshire. They might be called wooden cases for hives, and were about 20 inches wide and nearly as deep. They stood on floor boards and had moveable lids. The hives placed inside were well protected and easy of access. The cases were large enough for supering, sacking, and feeding inside, and cost 15s. each. I saw eighteen in one garden, where they had a very pleasing appearance. Between the hives and the cases there is space enough for some under-covering in frosty weather. I have never seen covers so complete and satisfactory.

During the active months of summer there may not be space for all I have to say in the first number of the month, and it may, therefore, be necessary to continue my remarks another week. As I am anxious to make these notes as comprehensive as possible, if any of your readers find difficulties in bee-management, on stating them to the Editors they will receive the best consideration and attention.—A. PETTIGREW, *Sale, Cheshire.*

## BEE-FARMING.

IN ANSWER to "G. H.'s" query whether I kill the queens excepting one when uniting three or four swarms, I believe it is the best way to do so, as a young queen may be selected for stock in that manner; but in my practice I have not done so, simply because in this part of the country we keep the heaviest hives for stock (so that there may be no danger in wintering), and such often happen to be the first swarm, consequently second swarms and old stocks which have young queens are generally condemned. These are what I have had to unite, and as I did not fear securing a queen out of the lot, I have taken no further trouble, excepting in my own apiary, where I have followed the practice laid down in the "Handy Book of Bees"—viz., to take the heaviest hives for honey, and feed the lightest to the required standard. I seldom find much difficulty in preventing the bees fighting. I believe scent is the bond of union; for if fighting is going on, by blowing smoke of corduroy or fustian vigorously amongst them the commotion ceases at once.

When taking my friends' bees, which are kept in the small old-fashioned hives, I proceed thus:—Suppose four hives have to be taken, I get four empty hives, blow a little smoke into each of the condemned ones, and proceed just as in artificial swarming, only drumming longer, or till the bees are all out or nearly so. I then place the bees on the original stands and take the honey-hives into some dark outhouse, turn them bottom upwards, and in the course of half an hour what few bees are left in the honey-hives will be glad to escape to their original stands as soon as light is admitted. I then take the two hives next each other, and dash one on its own slab and place the other on it, taking care to fumigate them equally. I wait a short time while these unite, which will not be long in September or October. I then treat the other hives in the same way, and perhaps not more than a score of bees will be lost. I have united stocks in my own garden without the loss of a single bee excepting a queen, which I found underneath the hive.

Respecting the other query on supering I cannot say much, for I have only tried twice—once in 1872, and once in 1873—and have succeeded pretty well by simply placing a little guide-comb in the glass, putting it on an adapting-board, and then over the circular hole—say 3 or 4 inches in diameter—in the top of the hive, without any restrictions to the queen or drones. I am thinking of trying several experiments in supering next summer, and if the weather be favourable your correspondent will be welcome to my experience.—THOMAS BAGSHAW, *Longnor, near Buxton.*

## WHAT IS HONEY?

THE discussion of "What is Honey?" recalls the old controversy of "The Chemistry of Honey," where it was held on the one side that even sugar and water after passing through the body of the bee and stored-up became converted into veritable honey, a doctrine from which our Editors, if I remember, as well as the present writer, entered their dissent.

Mr. Pettigrew is perfectly correct in treating, for practical purposes, sealed honey as a distinct article from the unsealed; the latter, as I have taken occasion before now to point out, will not thicken nor consolidate, even after frost sets in, while the former will stiffen-up and crystallise during midsummer heat; hence the great necessity for bee-keepers on breaking-up hives to keep the two perfectly separate. Unsealed honey is always better given at once as feeding to bees, otherwise mixed with the sealed it has the effect of keeping the whole thin and inducing fermentation.

I related a few years ago how I found a very capital straw hive, driven on the twenty-fourth day after swarming, had, at

the end of the season, when a large body of healthy bees were introduced, the unsealed honey covered over with a white fungus, and that it turned out in the spring a mass of corruption from foul brood thereby induced.

While agreeing with Mr. Pettigrew as to the distinctness of sealed from unsealed honey, I cannot subscribe to the twice swallowing and disgorging process with the accompanying chemical change thereby brought about. I incline to think, rather, with your other correspondent "B. & W.," that of this we want adequate proof; neither do I believe our orderly little favourites act on the haphazard system of tossing the honey "into the first empty cells they can find." On the contrary, such of us as possess unicombed observatory hives are familiar with noting the great time and pains every fresh arrival takes in selecting the cells in which to store away pollen as well as honey, with the evident intention of keeping all properly classified and distinct, and we cannot fail to observe the gradually-filling honey cells in the upper portion of the hive, till at last only the smallest orifice remains in very many; and may it not be that our favourites at this particular stage possess the power, before hermetically sealing-up, to suck-out and extract the aqueous and aerial properties, causing it ever afterwards to consolidate and keep?—A RENFREWSHIRE BEE-KEEPER.

### HONEY SUPERS AT EXHIBITIONS.

I AM very glad to see your able correspondent "B. & W." has taken up the above subject. I certainly did not expect to see exhibited at our flower shows supers filled by artificial means; but as I said in my previous letter, it was unfortunate that it should have been such a bad year for bees for the great Show at Manchester, but at any future show the honey should be honey proper—i.e., gathered by the bees from flowers only. I have been a prizetaker with bell-glasses as well as with hives, but never gave my bees an ounce of honey or sugar in my life, except to feed them up for the winter. I entered in the class for supers, glass and wood, or straw, but had no success in either, though I had my bees on the heather.

I quite agree with "B. & W." that rules should be laid down, but in No. 1 I leave out that portion about feeding bees eight months previous to the show. I like to give my bees a little food in March. I would not allow feeding after March. No. 2 I do not agree with. Let the exhibitor strengthen his stock so that the honey may be legitimately stored by the bees.

I was at the Burton-on-Trent Flower Show in August last, and the supers were very poor; many were not half full—very different from what they were two years ago, which was the first show, and I think the best I ever saw except that at Manchester this year. They all said it was a poor season in the Burton district, which I think can be echoed by all bee-keepers.

If some rule could be laid down so as to guide the committees of flower shows, I think they would avail themselves of them. I can name a few shows that I attend in the northern and midland counties, and perhaps "B. & W." or other correspondents can assist in the matter, so as to give all a fair chance; but by all means leave a class for the working man both in straw hives and straw supers.—SOUTH LANCASHIRE BEE-KEEPER.

### SALT FOR BEES.

If "A. T. W., *Kidwelly*," adds a little common salt to his food for bees, particularly in the spring of the year, the food will be greatly improved. Insects, like animals, crave for salt at times. I am, sir, an old bee-keeper and have often watched them, in the early spring, sucking the straw of a freshly turned-out dung-heap from the stable—for what?—it is the salt in the manure.

Allow me to add to this note the very simple mode of taking a hive for honey, practised by me for years. On a very fine sunny day when the bees are fully occupied away from home, stop up the entrance and gently remove the hive some little distance from its stand, then turn it upside down, take away the bottom board, and what bees are at work in the hive will immediately rise in the air and fly back to their old quarters, and from there they will again search for their property, displaying a most wonderful instinct.—AN OLD MAN.

### OUR LETTER BOX.

**SEPARATING VARIETIES (H.).**—It is high time your fowls were separate. If they are laying at the time of the separation you should wait (to prevent disappointment) a fortnight. If they are not laying when put apart for breeding purposes, and begin a week afterwards, you may set the eggs. Where it is intended to set early eggs, the birds should be divided the first week in December. There is little or nothing gained by keeping them together.

**BANTAM EGG-BOUND (W. H. S.).**—If the case be as you represent it, and there is an egg that cannot be laid, the cure is easy, but not so much so as if you could have acted at once. Draw out a wing feather, soak it in castor oil, and introduce it in the egg-passage. You must do it gently, and you must not touch the egg. If the egg be broken in the passage the case is fatal. Lubricate the passage till the egg begins to move, and the cure is rapid. It is probably the first egg. Let Nature do all that is necessary after the oil, and do not help her.

**DARK BRAHMA'S PLUMAGE (F. S. G.).**—Many of the best Brahma cocks

have a few buff feathers. They are not desirable, but they are by no means a disqualification. We do not believe the Golden Hamburgs had anything to do with them. The fault is a graver one in pullets and hens. The question of breasts is almost a matter of fancy. The first and best birds ever imported had speckled breasts. No judge would be justified in withholding a first prize from a bird on account of a speckled breast, if he were superior to his competitors in other points.

**HODNANS' CHARACTERISTICS (Houdan).**—The proper colour of Hodnans is black and white speckled, not only in the plumage, but in the colour of the legs. Some prefer darker, some lighter plumage. The essential points of the breed are five claws, good top-knots and beards, and a square Dorking-shaped body.

**FOWL HOUSE (L. S. F.).**—The roosting place of a given number of fowls is not so important as the extent of their run. Six birds will roost comfortably in a space 6 feet square. You can make up the necessary number of cubic feet by taking it out of the clouds. Make your houses 12 feet high. They need only be plank all round, and should not exceed 35s. each.

**MAIZE FOR FOWLS (F. P. G.).**—You would not presume to contradict us, but you differ from us in toto. Granted. *Punch*, some time since, gave us the drawing of two militiamen—"raw material." "Jim," said one, "you he'st in step." "Be'ant I? then change your'n." We keep a thousand hens and pullets and feed them well. We keep account, and are sure that for early laying maize is not the food. We give a little every day, but our food is ground oats, barleymeal, whole barley of the best quality, and scraps. We believe in no foods. We are never without eggs, but we do not come up to your numbers. May your eggs never be less.

**CANTERBURY POULTRY SHOW.**—There is an omission of the third prize in the Black Red Game Bantam class. It was awarded to Mr. T. W. Ains, 42, High Street, Clapham.

**ROYAL DUBLIN SOCIETY'S WINTER SHOW.**—Mr. Seale did not win his own cup. It was won by Mr. Zurich with the best Bine-pied Pouter hen, and duly presented to him.

**NAME OF BIRD (Naturalist).**—The name of the bird you mention on page 502 is the Mountain Finch, Brambling, or Bramble Finch, as it is commonly called by bird-catchers in the neighbourhood of London; the *Fringilla montifringilla* of ornithologists.—D. BROWN.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain.
1873. Dec.	Barom. at sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Ta. 23	30.176	49.0	38.7	S.W.	42.8	47.2	33.6	64.8	31.1	—
We. 24	30.197	48.9	45.7	N.W.	43.8	51.2	39.3	58.0	38.9	—
Th. 25	30.317	39.2	39.0	W.	43.3	46.2	36.2	45.8	31.9	—
Fri. 26	30.053	44.8	41.9	S.	43.4	45.8	38.6	46.2	38.8	0.168
Sat. 27	29.779	38.8	38.7	N.W.	43.3	46.8	38.5	72.2	38.6	0.103
Sun. 28	30.206	28.8	28.7	W.	41.3	35.0	28.1	35.0	24.2	—
Mo. 29	30.087	29.0	29.0	N.E.	39.7	38.4	26.6	57.3	27.6	—
Ta. 30	29.597	33.6	31.8	S.E.	38.8	48.6	28.4	59.0	27.8	0.087
Means	30.057	37.9	36.7		42.0	44.9	33.6	51.7	32.4	0.055

### REMARKS.

23rd.—Fine forenoon, then rather cloudy; rain in the evening, and wind at night.

24th.—Fair and pleasant, but not bright though warm.

25th.—Foggy and misty in morning; fair about noon; fine evening.

26th.—Dull all day, with rain in the evening.

27th.—Heavy rain in morning; very bright sunny afternoon.

28th.—More or less fog all day, no sun, and very foggy at night.

29th.—Foggy in the morning, especially about 8 A.M.; finer afternoon, with some sun; fine evening, with lunar halo.

30th.—Fine morning; rather raw day, and sharp shower at night.

A week of very ordinary December weather, no remarkable extremes either of heat, cold, pressure, or rain; the temperature frequently just about freezing point, and repeated fogs.—G. J. SYMONS.

### COVENT GARDEN MARKET.—DECEMBER 31.

WE have no alterations to report.

### FRUIT.

	s. d.	a. d.		s. d.	a. d.
Apples.....	10	0 10	Oranges.....	100	4 0 to 12 0
Chestnuts.....	10	0 20	Quinces.....	doz.	0 0 0
Grapes, hothouse.....	10	0 7	Pears, kitchen.....	doz.	1 0 0
Filberts.....	10	0 16	dessert.....	doz.	2 0 0
Cobs.....	10	0 8	Pine Apples.....	lb.	3 0 0
Lemons.....	100	8 0 to 12 0	Walnuts.....	bushel	10 0 16
Melons.....	each	1 0 0	ditto.....	100	2 0 2 6

### VEGETABLES.

	s. d.	a. d.		s. d.	a. d.
Artichokes.....	doz.	8 0 to 8 0	Mushrooms.....	pottle	1 0 to 2 0
Asparagus.....	100	6 0 0	Mustard & Cress, punnet	0	2 0 0
French.....	25	0 0 0	Onions.....	bushel	2 0 4 6
Beans, Kidney.....	100	2 0 0	Pickling.....	quart	0 6 0
Beet, Red.....	doz	1 0 8	Parley per doz. bunches	0	0 4 0
Broccoli.....	bundle	0 9 1	Parasol.....	doz.	0 9 1 0
Cabbage.....	doz.	0 1 6	Peas.....	quart	0 0 0
Capsicums.....	100	1 0 0	Potatoes.....	bushel	3 0 4 6
Carrots.....	bunch	0 6 0	Kidney.....	do.	0 0 0
Cauliflower.....	doz.	3 0 8	Round.....	do.	0 0 0
Celery.....	bundle	1 8 2	Radishes.....	doz. bunches	1 0 1 6
Coleworts.....	doz. bunches	2 8 4	Rhubarb.....	bundle	0 0 0
Cucumbers.....	each	0 6 1	Salsify.....	bundle	1 6 0
Endive.....	doz.	0 0 0	Savoy.....	doz.	1 0 2 0
Fennel.....	bunch	0 3 0	Scorzoneria.....	bundle	1 0 0
Garlic.....	lb.	0 6 0	Sea-kale.....	basket	2 0 3 0
Herbs.....	bunch	0 3 0	Shallots.....	lb.	0 3 0
Horseradish.....	bundle	3 0 4	Spinach.....	bushel	2 0 8 0
Leks.....	bunch	0 3 0	Tomatoes.....	doz.	2 0 4
Lettuce.....	doz.	1 0 1	Turnips.....	bunch	0 3 0 4
			Vegetable Marrow.....	0	0 0 0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 8—14, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
8	TH	PRINCE ALBERT VICTOR BORN, 1861.	41.0	30.8	35.9	15	6 47 8	8 44	28 10	58 10	20	7 1	8
9	F	Fire Insurance to be paid.	41.2	30.8	35.0	15	6 48	9 4	36 11	9 11	21	7 26	9
10	S	Linnaeus died, 1778.	42.0	30.3	36.1	18	5 8	10 4	morn.	20 11	21	7 50	10
11	SUN	1 SUNDAY AFTER EPIPHANY.	41.5	30.1	35.8	22	5 8	12 4	45 0	31 11	23	8 14	11
12	M	Plough Monday.	42.1	29.5	35.8	18	4 8	13 4	57 1	45 11	24	8 37	12
13	TU	Day breaks 6.0 A.M.	43.0	29.3	36.2	19	3 8	15 4	11 3	after.	25	9 0	13
14	W	Oxford Lent Term begins.	42.1	29.9	36.0	19	2 8	16 4	29 4	25 0	26	9 22	14

From observations taken near London during forty-three years, the average day temperature of the week is 41.8°; and its night temperature 30.1°. The greatest heat was 54°, on the 12th, 1852; and the lowest cold 3°, on the 13th, 1867. The greatest fall of rain was 1.00 inch.

## SAVING FUEL.



**PRESUME** that the modern compensating systems of heating, as applied to hothouses, have not been as yet so generally adopted as to have had much effect in modifying the fuel bills. To discard any boiler which has done, and is still capable of doing, good service, to give place to some of these comparatively untested inventions, is a matter which demands consideration, and even the recommendation of liberal compensation may not have the desired effect of introducing them into office.

The next question which is likely to prove of interest, and one worthy of being discussed, is, How best to economise with those appliances which are already in general use? Cheap, and therefore inferior, fuel is often advocated and used for the sake of economy. My own experience goes to prove that no saving whatever is effected through the use of such. Good coal or coke always contains and gives out the greatest amount of caloric, and in the end is the cheapest. We some time ago tried the dress, but what with inferior fires and a much larger quantity of refuse, we have resumed and will abide by the good coal.

I am of opinion that if economy is to be practised, its most effective form will be through the reduction of temperatures.

Low night temperatures for Vines have lately been much advocated in some of your contemporaries. A night temperature 10° or 12° above the freezing point for Vines very early in the season, and at a very tender stage of their growth, is said to have a very beneficial effect. Some Muscat Grapes I saw exhibited in September last had been grown under this arctic treatment, and certainly the livid sea-green colour was not salutary. Where early forcing in the true sense of the word has to be practised it can only be successfully done by some powerful stimulant, and that with the Vine means heat. No fruit-bearing plant under artificial circumstances is more susceptible of cold than the Vine. Any attempt at starving it is sure to end in failure. I never yet could mature Grapes at a given time, or indeed at any time, in a temperature continually below 60° at an advanced stage of growth; it is not, therefore, so much with the object of diminishing the heat for Vines that I wish to call attention to low night temperatures, but rather as regards the treatment of Pines and other exotics. I believe the fuel consumed for vineries throughout the winter and early spring months is small compared with that required to keep up the tropical temperatures which are frequently supposed to be absolutely indispensable for the well-being of these plants at all seasons of the year. It may be said one Pine stove does not exist for ten vineries; but for one viney started in the dead of winter ten remain inactive until the advance of genial weather, when fostering care nearly dispenses with fire heat.

The heating of large plant establishments is a serious consideration: some which I know would not only bear

with impunity but positive advantage a reduction of 10°, or even 20°, in the temperature at which they are at present kept. I am able to affirm this from practical observation. A boiler which previously did its work most efficiently, heating ranges exclusively devoted to Pines, Orchids, &c., by means of upwards of 2000 feet of 4-inch piping, had an additional range with 1000 feet more piping attached in October, 1872, and the circulation towards the first-mentioned ranges was greatly impaired, and the temperature of the interior reduced to a degree seldom, if ever, before attempted for such inmates. In cold weather (the place is much exposed) the night temperature of the houses for weeks in succession sometimes did not exceed 45°, and that of the day, with a few glimpses of the sun rarely exceeded 60°, that being the minimum and this the maximum from October to the end of March; yet of Pines there were numbers in various stages, principally succession plants of Smooth-leaved Cayenne, and there were, besides, a good number of the same variety in fruit; also a lot of Queens which showed fruit, as desired, in September. I never recollect seeing successional plants remain so dwarf, rigid, dark green, and healthy during the dull months of winter. Those bearing fruit did not swell it so rapidly or mature it so soon as they would have done in a high temperature; but how different the finely-developed plump-pipped fruit from those shrivelled or prematurely ripened in a high stewing temperature! The Queens, many of which did not ripen until the end of March or the beginning of April (a grand hit for the early season), were double the weight of those subsequently ripened in a high temperature in June. The houses are, as all Pine stoves should be, drip-proof. Moisture was, and required to be, very judiciously applied both at the roots and in the atmosphere under cool treatment. Pine-growers would do well to study the giving of water in any form at all seasons of the year. According to experience more rests in watering than attention to all the other requirements combined. Nothing is more injurious to the Pine Apple than supplying the plant with a quantity of water when a corresponding absorption or evaporation is not taking place.

In ordinary practice, to have Queens ripe by the beginning of May, a sharp start is necessary in January, when much fire heat is needed between those dates. It is now a matter of serious consideration whether it would not be attended with many advantages to start the plants into fruit in autumn, and grow them slowly during the winter, as above indicated, to meet the demand in May, and so avoid the roasting push which is often resorted to when ripe fruit must be had at that period.

Amongst the Orchids were many of the finest East Indian kinds, as well as species of nearly every genus. The whole not only retained their formerly healthy condition, but actually improved in the low winter temperature, as was evident from the stiff foliage, the still deeper shade of green it assumed, the numerous finger-like fresh roots which the plants emitted, and the profusion of bloom which they have since produced. Other stove

plants were equally luxuriant. To lower the temperatures without decreasing the care bestowed in cultivation would be no loss, but to lower the temperatures and raise cultivation to a higher standard of perfection is certainly a great gain. It was in contemplation in this case to keep the plants a little cooler in winter than they formerly were, but certainly not to the extent forced upon us; yet so successful was the treatment that the temperatures were again lowered for the winter, and no apprehension whatever is felt on entering a Pine stove in the morning to find a nice sweet atmosphere and the thermometer indicating 45°.—M.

### LEUCOPOGONS.

I WISH to direct the attention of the readers of the Journal to the claims the various members of this genus have to a more extended cultivation. I do not remember, during the whole of my gardening experience, having ever seen them grown to any great extent; and when the taste for New Holland plants died out, these, with many other beautiful greenhouse ornaments, suddenly disappeared, saving in the collections of those who were old-fashioned enough to love plants for their real worth and beauty quite independently of what might be the fashion at any particular time. I must confess being old-fashioned enough to love these Leucopogons, for they supply a profusion of snowy white flowers which are invaluable during the winter months. They bear cutting well, and I really know of nothing which is so tasteful for arranging in a lady's hair for a ball or dinner party. I always endeavour to cater for the fair sex in the matter of plants and flowers, and if my fair readers will only grow a few plants of the genus now under consideration they will always have, during the duldest season of the year, material for bouquet-making or head-dresses of the most chaste and beautiful description.

Leucopogons have been so much neglected that it is very questionable if one in a dozen, even of those whose business it is to know plants, have an idea of the truly beautiful objects they are when well grown. They will not conform to crinoline training like an Azalea, but with a little management they form compact handsome shrubs, which in winter are laden with clusters of snowy flowers of great beauty. They belong to the Epacrids, and as a genus are distinguished by their funnel-shaped corolla, which has five spreading lobes; these corollas being seated in a five-lobed calyx, furnished at its base with a few dry chaffy bracts. The anthers are five in number, situated on short filaments included within the corolla; whilst the style is furnished at the apex with a capitate stigma, and gradually increases in size down to the base. The fruit is usually a berry, but this will not be an object of decorative utility. The flowers are white, borne on terminal and axillary spikes.

The cultivation of these plants is quite simple, and they may be grown by those possessing very little glass-house accommodation. One thing, however, is essential to their well-being, and that is an abundance of sun light. The soil should be about two parts good peat, one part light loam, and one part sharp sand; the whole should be well incorporated, and used when in a nice friable state. It used to be held as an infallible maxim that Leucopogons did not like or require much water, and so, forsooth, we hear it said now very often respecting Ericas; but my experience goes to prove that both genera like a plentiful supply, but the drainage must be perfect, so that nothing stagnant nor sour remains about them for an instant. After flowering, and before growth commences, the plants should be cut back to within some few inches of the old wood, but upon no account should they be pruned too hard. To avoid repetition it will be well to observe that the flowers are all white, and the limb of the corolla is more or less bearded with white hairs, hence the generic name. The following few kinds are amongst the most desirable, and are well deserving of careful attention at the hands of all lovers of winter-flowering plants.

**L. RICHII.**—This species is tolerably plentiful on the mountains of Tasmania and New South Wales, where it attains a height of 4 or 5 feet, and assumes the proportions of a handsome shrub. The leaves are oblong-lanceolate, of a smooth and shining green, which contrasts beautifully with the snowy flowers that are produced on axillary spikes, continuing in perfection for several months during the winter and spring.

**L. LANCEOLATUS.**—Like the preceding this plant blooms during winter and spring, but in addition so profuse is it that strong plants often continue well into the summer before the

last of the flowers pass away. It naturally attains a height of from 6 to 10 feet, but I have seen it flowering when about the same number of inches high. The leaves are lanceolate and dark green; the flowers borne upon axillary spikes and pure white. Native of the mountain districts of New South Wales.

**L. TAMARISCINUS.**—This is a very handsome species. The leaves are ovate, smooth, and dark shining green; flowers produced upon somewhat dense spikes, and in great profusion. It continues in beauty throughout the winter months. Native of New Holland.

**L. AUSTRALIS.**—This is the last I shall enumerate, although there are many others deserving a place in large collections. It attains a height of some 3 or 4 feet. The leaves are lanceolate, long, narrow, and dark green; spikes many-flowered, axillary, and produced during the whole of winter. Native of Tasmania, &c.—**EXPERTO CREDE.**

### VINE CULTURE.

THERE is one period of the year when I think Vines planted in inside borders are not treated rationally, even by many whose cultivation is otherwise faultless, and to this I attribute many of the evils complained of during such a trying summer as the past.

As soon as the fruit is gathered the borders should be thoroughly examined to see whether they require water; never mind injuring a few roots, it is better to do this than allow the whole to suffer, and, moreover, the Vine will bear its roots being cut, and in many cases this is beneficial to it, inducing it to emit feeders more at home.

It is quite a mistake to suppose that the roots of Vines, or indeed plants in general, should be kept dry during their so-called resting period; they are never really at rest. I believe the nearest approach to rest in the roots of Vines is just at the time the buds are bursting into leaf; there is no visible sign of growth in them till some of the leaves have grown to their full size. The exact time when root-action commences can be told to a nicety by noticing the colour of the leaves, which is of a very light green at first and remains so for some time, when suddenly on the forwardest and healthiest plants patches appear which are almost blue, and gradually mingle with the lighter colour, and all is changed in a few days to the beautiful lively green so natural to the healthy Vine. When this bluish colouring matter first appears is just when the plant has begun to make use of its roots. Although a large plant may have made sufficient leaves to cover a quarter of an acre, it has had nothing to do it with besides what was stored-up in itself till such time as the leaves began to assume a darker colour, and then it would begin to draw fresh supplies from mother earth.

Bearing this in mind, it is reasonable to suppose that the roots have much to do in the autumn, and practically this is found to be the case; the roots are quite fresh and seemingly active long after the leaves have put on their autumnal colours, and I believe that as long as a leaf has any hold on the stem the roots are busy.

All this I consider of the greatest importance to the cultivator. There are seasons when he cannot water his plants, notably when the ripe fruit is hanging on them, and without doubt they frequently suffer at this time, for the evaporation going on is something enormous in warm dry weather; but this can be remedied to a certain extent by giving abundance of water just before colouring, and again, if necessary, after the fruit is gathered. As far as my experience goes, with a well-made border it is always necessary to water in autumn or winter.

Another lesson to be derived from the facts I have mentioned concerning root-action commencing in the Vine after the formation of the first leaves, is not to apply too high a temperature till it can be seen that the roots are actually at work. Not that I would start with a very low temperature. I commence with 50° to 55°, and do not exceed this for ordinary Grape-growing—I am not writing about forcing—till the flowers are set. Muscats are no exception; mine are often below 50° when in flower. Flowers formed in a comparatively low temperature and with continual ventilation have shorter and stronger flower stalks (bear this in mind, my friends who are troubled with shanking); the flowers are more perfect in every way, the quantity of pollen produced is something marvellous compared with that produced in a higher temperature. A greatly-respected octogenarian in company with one of our

worthy Editors actually asked last summer if I had been troubled with mildew, the pollen that had fallen on some leaves of Lady Downe's looking in the distance exactly like sulphur.

Although I recommend the same temperature for Muscats as for Hamburgs, I do not advise them to be grown in the same house when it can be avoided, because they flower and ripen at a later season.—W. TAYLOR.

### JUDGING ROSES.

In answer to the appeal made in the Journal on the question of the presence of Tea Roses in a stand, will you permit me as one who has now for a great many years had the privilege of acting as a judge of Roses to give my view of the question? I have never considered the presence of Tea Roses in a stand added anything to its value, and for these reasons—

1. I am set to judge the twenty-four (let us say) best Roses, and my object is to ascertain which are the best Roses of the kind exhibited; whether, taking two stands, there are more really good Roses in the one than in the other. I do not think that I am called upon to consider whether I like a pink Rose better than a crimson, or a yellow than a rose colour, or a Tea than a Hybrid Perpetual, but whether, knowing the sorts, those exhibited in one stand are finer, fresher, and more perfect than in the other. I have frequently seen one stand where great faults were committed in matters of taste—putting too many of one colour near to one another, or placing a small flower where a large one ought to be. But I have ever held that even taste in putting-up is subordinate to quality of bloom. In the same way I have seen a box where the moss was perfection and the blooms at first sight caught one's attention, and another where it was indifferent; but again, to the perhaps intense disgust of the owner of the first box, I have stuck to my rule—quality of flower, and not the accessories.

2. The alleged difficulty of getting good Tea Roses is one more dependant on climate and situation than on anything else. Our friends in South Devon would not have the same difficulty of growing them as those in the midland and northern counties. An amateur who has a walled garden can grow them better than one whose garden is open; and therefore I do not think a man who is thus favoured has to get an extra mark because he has a favourable locality in which to grow his Teas. And were we to enter into such questions we should want to know who had a good Rose soil or who had not; whether an amateur lived on the top of a breezy hill or in a sheltered nook; and therefore I think the best and safest rule is to take the Roses as they are, and let the finest and best win.

The difficulty which some of your correspondents have felt about their breakfast on the morning of the Rose Show at the Crystal Palace is one which can easily be met. If they will go out of the main entrance and cross over to the high-level station of the London, Chatham, and Dover Railway they can get anything they like. As to Kensington, that *inhospita terra*, the nearest port of refuge is the Museum. The only drawback there is, that as the shows are always held on Wednesdays, it is one of the days on which you cannot get in without paying.—D., Deal.

### TO YOUNG GARDENERS ON RENOVATING OLD FRUIT TREES AND OTHER SUBJECTS.

I THINK there can be nothing of greater importance to a gardener at any time, but especially when taking to a garden which has been neglected, than having a well-grounded knowledge of what is required and what can be done with old and somewhat exhausted fruit trees. Many a young gardener has regretted the folly of making a hasty condemnation and clean sweep of all trees of any considerable size existing in his newly acquired situation. What is the result? The supply for some years cannot meet the demand. Should the employer be a consenting party to the wholesale destruction—in some instances he is really the instigator—yet in a little while when there is no fruit, or but little, he forgets about that, and the gardener alone is held accountable. The stream of discontent once set running, it is sure to swell with other grievances whether real or imaginary. It is best at all times to avoid this if possible. It is apt to be said, "We used to have such and such fruit." (N.B., Cocks can do this nicely—quality is nothing to them if the quantity is little). It is enough for a young gardener to feel disgusted at the malformed trees and the cracked disfigured little fruit, after being accustomed to fruit of large size and

perfect shape, not to speak of well-trained trees. I can quite understand the ambitious feelings that will at once spring up under such circumstances in a young gardener who wishes to excel; but it is best to be on the safe side, and rather than make a sweeping clearance I would strongly advise the adoption of a more gradual course—to feel, as it were, the way. To make a grand sweep of good, bad, and indifferent before consulting the requirements of the house, or knowing whether it is possible to replace the trees with better varieties suitable to the locality, is a matter of the greatest importance. To replace an indifferent fruit tree with a really bad one, or worse, to have no fruit whatever, will bring down from all quarters the most disagreeable consequences. Can there be a greater pleasure or a more noble and interesting pursuit, to say nothing of its practical bearing, than to bring back a deformed and somewhat exhausted tree to youthful vigour and fertility? I maintain that this in all respects is more creditable and of greater utility than replanting, where there are trees of a proved variety which is known to suit the situation.

On producing a crop, should the sample of fruit be indifferent as to size and appearance, and the trees vigorous and healthy, in displacing them for fruit of a nobler character, I repeat we may replace proved sorts unknowingly with worse. To grub-up a tree and plant a nursery tree instead, as is too often done now-a-days, is a mistake. I have often seen grand trees wantonly cast away in order to make room for a young tree that must take years before it produces the crop which the old one would do with a little judicious treatment. We are apt to look at a tree which has got to the top of the wall, for instance, unless it is a model of training, with an eye of contempt—as an eyesore which must be destroyed at any cost. We ignore the fact, that when in a bearing condition there will be as many basketfuls on it as there will be single fruit on the young tree in the same period. When we have a large tree with a good constitution we can at once place half a dozen young trees on its head, and in the second or third year have the whole well furnished with fruit. I do not think I am without the bounds of truth when I state that in many instances there is a long and vexatious scarcity of fruit, owing to the erroneous idea that it can only be obtained by replacing the old trees with others subjected to more modern treatment. It is undoubtedly in many instances a great mistake not to attempt renovating neglected trees, in others they must undoubtedly make room for young subjects; but which course should be adopted in each particular case must be a matter of judgment, which can only be decided upon by one on the spot.

I will now rather deal with the best means of treating a tree that it is deemed necessary to renovate; and in laying my ideas before your young readers I can assure them that what I shall state is the result of long study and close observation, by one whose natural taste is for gardening, and whose experiences commenced with infancy, under an enthusiastic fruit-growing parent. "Ah!" some will say, "he is evidently one of the old school." Not exactly, nor of the new, but I have great faith in the natural. I am not an admirer of the careless grow-as-they-like system. Nothing seems more out of place in a gentleman's garden. Lately I visited two large establishments in which all fruit trees, except those on the walls, were left to grow at will, and certainly they produced immense crops. In an outside spot, as an orchard, no one would complain of them, but where everything is kept with mathematical exactness we look also for the gardener's skill being brought to bear on the trees. I happened to call again at one of these gardens, and a young man had taken charge. These trees were all cast away, and young ones took their place, but the sequel was he had to go himself. Apples could be carted away like Swedes from the field—and then to have none! It was out of the question. No one can deny that it is a great advantage to have these big trees, either in a quarter of the garden, or, better, in an orchard. Without them the basketful after basketful of fruit needed in many establishments would seldom be forthcoming; but if planted indiscriminately they are out of place in a well-kept garden. The tendency of to-day is towards the opposite extreme. A deformed pigmy fruit tree, of a foot or two high, loaded with eight or ten fruit, is pretty enough in its way, but how many such will it take to supply the house a week? There is in their case no pick-and-come-again. The legions of whimsical geometrical-trained fruit trees is only equalled by that of the numberless patent forms of miniature glass buildings. They are well enough after there is sufficient of the more substantial necessities. Their place is simply to

form an auxiliary; to rely on them solely is an error that cannot be too studiously avoided.

Utility must ever be the pass-word in the fruit and vegetable garden, and infuse ornamentation when it does not interfere with utility. The torture to which fruit trees are subjected on the Continent, and which some too enthusiastic admirers on this side of the water would have us believe to be the perfection of training—has not this been proved to have eventually a very detrimental effect on the well-being of the tree? It has been proved over and over again—to wit, with the Azalea and many other subjects—that there are certain bounds beyond which nature cannot be forced with impunity. I ask, Where is the great bulk of fruit that fills scores of fruit-rooms grown, supposing that there are hundreds of these fancy-trained trees, also an orchard of more natural character, but not neglected? My experience, and I believe that of most others—especially with Apples—will answer in favour of the orchard. Pigmy-trained trees are playthings for the owners of many small gardens, who derive more pleasure in occupying their time in training than from the quantity of fruit produced. To many again—and I share their idea—nothing seems to be a fruit tree unless they can hide themselves amongst its blooming branches in spring, and have a store of fruit at Christmas. What is wanted now-a-days is a maximum of fruit for a minimum of labour. We have now to contend with acre after acre of dressed ground, and thousands upon thousands of bedding plants, the ever-wanted cut flowers, to say nothing about an abundance of tender vegetables, and all this with a minimum amount of labour. It is consequently impossible to pay that attention to the repeated pinching, lifting, training, mulching, and the like, that must be attained to in order to attain any degree of success.

I am well aware that many who have a thorough training think it not beneath their attention to study out-door fruit culture, and will not commit themselves; but too many by half think if they can run-up a long list of long names they are at once gardeners. Young men, depend upon it, it is a grave mistake. A plentiful supply of fruit is an absolute necessity, flowers notwithstanding.

Now, where are those who never did a day's work with trees to learn about out-door fruit-growing? It is no mere fancy that there are such. I have worked under and with many young men who confessed to never having done so. There are many books on the subject, and from them their knowledge is obtained, but the books of modern writers seem to me to be written wholly for one end; they treat, from the beginning to the end, on young trees—nursery trees—of various shapes. The young man who studies such books will most naturally, unless he has had some practice in renovating neglected trees, proceed to destroy all to make room for the many fancy forms he admires on paper. I believe that it is seldom he gets an opportunity of realising with living trees the pictures which he admires. I do not assert there is nothing to be learnt from these books, but it is well to be able to judge of what is right by having a knowledge of what can be done in other ways. If I were to put into the hands of a young gardener a modern treatise on fruit culture, I would at the same time give him one of an earlier date, for instance that of Forsyth. There is in it no doubt some absurdity, but cannot the same be said of modern books in a more marked degree? Although it is upwards of seventy years since Forsyth published his work, it contains much sound knowledge that has not been improved on, and holds its own against newer ones, which seem to be written for the villa garden rather than for large establishments. Forsyth was a great man with me in my boyish days. Those beautiful, large, clean-skinned fruit, produced on the young branches in his faithful illustrations, compared to the small shabby tasteless fruit from the old scrubby branches—the quality and quantity on the former compared to the latter, were my delight to verify in growing trees. Especially do I remember a large well-trained Glou Morceau Pear tree, and the six or eight splendid fruit at the extreme end of each long branch, compared with the few small indifferent fruit located from their back to the stock. The question that suggested itself to my mind was, Why not have more of these vigorous two or three-year-old branches like the extremities bearing the fine fruit? It was with intense gratification when gathering fruit day after day that I noticed the difference between fruit growing on old and young wood. I always knew where to find fine, clean, high-coloured fruit. What benefit one derives from learning to think in boyhood! It helps one to overcome difficulties; it gives one more confi-

dence as to what will be the results of any particular operation. In a word, he gets the physical nature of the tree so well at heart that, like the practical physician with a sickly person, he sees at a glance if it is possible to regenerate the patient. It is, therefore, a great point in gardening—one to which young men should pay great attention—to learn when and how art can step in at the right minute to help nature, and to supersede her if it can.—J. TAYLOR, *Maesgwynne, S. Wales.*

#### NEW AND IMPROVED BOUQUET-HOLDER,

MESSRS. DICK RADCLIFFE & Co. have sent us the engravings of a bouquet-holder. It is made in electro-gold, is not only



a very handsome holder for a bouquet, but also answers the purpose of a stand for flowers.

#### STRAWBERRIES IN WINTER.

At this season of the year, what is there nicer to put upon the dinner-table than a good dish of Strawberries? I grow Keens' Seedling for early use, President, and Sir Harry. These are too well known to need description. I am well aware that they are old varieties, but as croppers and for flavour they are all that the most fastidious could desire. I always select as many of the first suckers as I shall require—they make the strongest plants—and all the other suckers I have cut off as they appear, which is a great consideration in the successful culture of the Strawberry in pots. I never allow superfluous suckers to remain. I pot each sucker in a small 60-sized pot, which I fill with rich compost—namely, good fibry loam and decayed dung, and I place a small stone on the stem to keep it in its place. Very soon the pot is full of roots. I constantly use liquid manure, and give them every encouragement; the more liberal the treatment the greater will be the results when fruiting. When the pots are full of robust roots the plants are separated from the parents.

I usually give the plants about three shifts. I never allow them to become pot-bound, and as they are repotted I place them in a warm position, where they are exposed to plenty of sun and air; each pot is placed on a flat brick, and plunged in ashes up to the rim, every precaution being taken to keep worms out. For the final shift for fruiting I use 24-sized pots, and I also pot very firmly, using a compost of fibrous loam, decayed dung, and crushed bones, with a good sprinkling of charcoal.

I have tried keeping the plants in pans when growing. I have seen decayed manure put in the pan, also water, but I do not like either. I always have the best success by pursuing the following method: I have turf cut out of a pasture, and placed bottom upwards—the grass on the shelf, the soil upwards. I place the pots on this; and when starting, the plants root into the turf and receive great support from it. When I water I give plenty on the turf. Many failures arise from giving them too strong heat when starting. I have seen them, after they have made their growth, placed on their side to keep them dry. I always place mine in an orchard house during the period of rest.

I have kept some plants during winter, and not fruited them till the second winter; they always repay me for the extra trouble. I call them two-year-olds. It is a very easy method; I pick off every bloom bud as it appears. The result the second winter is superior. In the autumn of 1872 I took up fifty plants out of a Strawberry plantation several years of age as an experiment, and from them early this year I had a capital crop, and at any future time if short of plants I should do so again. The red spider is the great pest of Strawberries; all

that is required to keep it away is the syringe used very freely.  
—F. P. LUCKHURST, *Mill Bank Hall*.

### ROYAL HORTICULTURAL SOCIETY—VOTING BY PROXY.

We have received two printed circulars asking the Fellows to give the power of voting by proxy at general meetings of the Society. We have on a former occasion warned the Fellows against giving that power. It always causes more injury than it effects benefit. It has always been found that those in authority, having the funds and officials to work with, are enabled to obtain proxies from Fellows residing at a distance much more readily than any opponent of the Council, who has to apply for proxies individually and at his own expense. No Fellow should have the power of voting on any motion without having heard the arguments urged on both sides. The House of Peers have resigned the privilege of voting by proxy because it was known to operate wrongfully; and we know of no reason why the Chairman of the Royal Horticultural Society's Council should be able to say, any more than a Prime Minister, "Let the opposition argue, I have the majority in my pocket."

In reply to "A LIFE FELLOW," a reference to the manuscript of my letter of Dec. 25th will show that it suggested that it would have been better if the first words of the "appeal" had been, "The old Council was caused to retire by a very small number of votes, and most of them local ones." I did not propose to alter "A LIFE FELLOW's" letter. I gladly, however, join issue with him on the question of fact whether it was a large or small number of votes which caused the late Council to retire. In your report of the meeting of March 26th, 1873, in the number of 27th March, 1873, Mr. Lindsay (page 256, second column), says, "It would be in their recollection that the circumstance which had led to these proceedings was at the last annual meeting, the vote for the non-adoption of the report was carried by a majority of 86 to 14; the Chairman then stated that he did not see how it was possible for the Council to take any other step than resigning." Eighty-six, mostly Kensingtonians, to fourteen horticulturists!—this on the authority of the Secretary of the present Council at the annual meeting of the Royal Horticultural Society, which numbers some 3500 Fellows; and "A LIFE FELLOW" considers that the old Council was not caused to retire by a very small number of votes, and those mostly local ones! Continue the reference to your report, and it is stated (page 258), that on Mr. Lindsay's amendment to prevent men's proxies, 107 voted for and 53 against, and that ladies' proxies were 225 for and 206 against. The numbers given in the *Gardeners' Chronicle*, published on the 29th, and therefore with more time to get the exact figures, are—"For amendment by show of hands 109, by proxies 116; total, 225. Against, by show of hands 53, by proxies 154; total, 207. Majority for the amendment, 18." Further on in your report, the bye-law permitting the Council to resign was voted for by 93, against 23 and 37 proxies. Majority for the bye-law, 33. "The supporters of the bye-law did not use proxies."

What I said is, that without starving horticulture I believe that the Council cannot pay the rent, £2400 according to the charter, when due, and I repeat it.

"A LIFE FELLOW" hardly sees the point in my answer to his comparison of the Zoological and Botanical Societies with ours. What I said was, that the Crown being the landlord of the houses round the Botanic and Zoological Gardens received on their increased rental a large rent for the space occupied by the Gardens. The Crown is not the landlord of the houses round South Kensington Garden, and the land having been bought mainly out of the people's shillings, it seems an abuse that the rich neighbourhood should not pay a rent approaching to its value if kept private—this to be applied to public purposes—or that greater public use should be made of the gardens.

"A LIFE FELLOW's" last paragraph I do not understand. If he means that I supported the proposal adopted by the late Council to admit Exhibition visitors to the garden on consideration of freedom from £2400 a-year rent and £2000 a-year debenture interest, and of an estimated £1000 a-year for horticulture (the settlement with life Fellows being understood), I fully admit this responsibility. I think this arrangement would have been a fair compromise. It would not have taken away very much of the privacy of the gardens from the Kensingtonians; it would have made some greater use of the land,

and would have given some money for horticultural objects, besides freeing the Society from much of the load which weighs it down. I fear that "A LIFE FELLOW's" Kensingtonian friends may regret the day that they prevented terms like these being carried out, and doubt the new Council's will and power to "sell the Society to the Commissioners" on better terms.  
—GEORGE F. WILSON.

### ABOUT ROTHBURY.

If the question had been asked some twenty or thirty years ago, What about Rothbury? the answer would likely have been that it is a village of no great importance in the centre of Northumberland; and if the inquiry had been made at an earlier period, it might have been said that its claims to respectability were of a somewhat questionable character. The tongue of slander used to say unpleasant things about Rothbury—not that it differed much from other villages, but the circumstance of its situation gave it a sort of claim to notoriety. It lies at a considerable distance from any other village of importance, and necessarily exercised a considerable influence for good or for evil over a wide district. It was here that the unfortunate Earl of Derwentwater and his adherents raised the standard of rebellion against the present ruling family of the country, and proclaimed a member of the exiled Stuarts as the Sovereign. The issue of that ill-starred rebellion is well known, and the wide domains of the unfortunate nobleman were forfeited to the Crown on his perishing on the scaffold. Sympathy for him, it need hardly be said, was long felt in the neighbourhood, where his good qualities as a landlord and a kind and indulgent master were widely known; and this sympathy no doubt led many to couple his case with that of the family for whom he sacrificed his life, and consequently in Rothbury and other places the people long maintained a hope that the cause of the Stuarts was not altogether desperate. Border songs and popular tunes breathing a wish of the kind were common enough in the younger days of people still living, although it does not appear that the Derwentwater property extended to Rothbury, the seat of the family being a good many miles away; neither does it appear that the claimant for the broad acres it once possessed, whose case occupied so much attention a few years ago, ever found much sympathy or support at Rothbury, although she met with it elsewhere.

To those intending to visit this once out-of-the-way village a journey on horseback or some primitive conveyance was necessary, and that not long ago. Now, however, that pioneer of civilisation, the railway, takes the traveller to the very place. A single line of rail branching from the North-Eastern line at Morpeth carries the passenger over some twenty miles, more or less, of uninteresting country. This term, however, would not be applied to it by the antiquarian, for objects of interest present themselves at various points on the way. First of all, while changing trains at Morpeth the town lies before him in a valley on both sides of the river Wensbeck, the railway station being much elevated above the town; in fact the district around Morpeth is very hilly, and crowning an eminence but a short distance from the station are the remains of Morpeth Castle, a stronghold in the border frays, which extended almost down to the union of England and Scotland, when most dwellings of any importance bore marks of having been fortified in some way. The Castle has evidently been one of importance, though not more so than another we catch a glimpse of a short time after leaving Morpeth. This is Mitford, once the stronghold of the Bertrams, a noted family in border warfare, and their family seat is of course mixed up with their history. Other fortified houses, as Ogle, Belsay Castle, and Letter Harle Tower are too far from the line to be visible to the traveller; but ere long he comes in sight of Roadley Castle, placed on a ridge of some elevation, but I believe the structure that now presents itself to the spectator is more of a sham than a real ruin, and its history is unimportant, while the aspect of the country is not inviting. By degrees this becomes wilder, and now and then glimpses of distant hills reveal the fact that we are approaching a moorland district; at a station a short distance from Rothbury the train stops, and looking out we find the name of one of the gentler sex is posted-up as ticket-collector, and very gracefully she performed her duties, informing us in reply to an inquiry that the remains of the famed Brinkburn Priory are some three miles off. But the train proceeds, and curving round the steep sides of a hill, the summit of which is in its primitive wildness, it pulls up at what is at present the ter-

minus, and the village of Rothbury is not more than a couple of stonethrows from us, but on the other side of the river Coquet, a stream which at this point seems to contain as great a volume of water as the Thames at Richmond. The river, the village, and the mansion are all seen to the best advantage from the railway station.

Perhaps there is nothing which marks the difference of ideas between the denizens of the north and their brethren of the favoured south than the manner in which they speak of the respective features of the country. In the north every river has its praises recorded in the popular songs of the neighbourhood, the Tweed and Clyde being especially rendered the burden of many a song; while Tyndale, or the tract of country drained by the river Tyne in its upper reaches, was noted all over the kingdom for the hardy and skilful class of bowmen it sent forth to foreign as well as border warfare. The efforts of the poet have not been wanting to sound its praises as a river, but I believe in the latter respect it would have to give place to the Coquet, the most important river in central Northumberland, as the Tyne is in the south of it. This noted river has its origin in the ridge of hills which forms the boundary between England and Scotland. The course of the stream before reaching Rothbury is through a valley of great width, and of proverbial good quality as farming land, the corn crops at the time of my visit (towards the end of August), being more advanced than at many places two hundred miles farther south, and excellent. The river, as may be imagined, takes a serpentine course through this flat district, but on nearing Rothbury the valley diminishes, and indeed the river is hemmed-in by high precipitous banks with but little land on either side that is available for cultivation; the village, it may be stated, is on the left bank, and the wild moor rises to a great elevation almost from the backs of the dwellings. In fact, it is in consequence of this place forming a sort of resemblance to the more distant highland scenery that Rothbury at the present time derives its importance; for at the back of the village is the moor in its full garb of hundreds of acres of Heather, which at that time was in full flower, and intermixed now and then with stunted Birches in some places and Willows in others, while more important than all were the huge masses of fixed and detached rock. Some of the latter were of large size, approaching that of a moderate-sized haystack, others such as the traveller could throw as easily as a cricketball, the whole, I believe, being a freestone of excellent building qualities, and which if placed near a large town would make a fortune to the owner. As it is, the buildings in Rothbury, old and new alike, are constructed of it; and although the weather-beaten surface of these huge masses presents the usual grey tint given by the Lichen, the stone when broken much resembles Bath stone, and appears to be more durable. The older houses in Rothbury present an agreeable pale-grey tint, while the newly-erected ones are of a bright stone colour. Some of the oldest dwellings have the familiar heather thatch once common in moorland districts, while their newer neighbours are roofed with blue slate; the timber-framed house of the south and west of England has no place here. Trees seem to be confined to the district immediately bordering the river.

The immediate cause which called an obscure country village into celebrity was the great salubrity of the place, and the advantages it presented of providing the densely populated district of the lower Tyne with a sort of highland outlet, and both the working classes and their employers have taken advantage of that. Excursion trains run from the great towns on the Tyne and Wear, carrying their thousands of pleasure or health-seekers for a day's "outing" on the moors, and who return with bunches of Heather as tokens of having been to such a distance; while for the more wealthy, ample accommodation has been provided in the shape of monster hotels. The ascent of the hill is an exhilarating pastime to the sedentary townsmen, and the pure air and other advantages add to their enjoyment.

Nor is the district without its charms, the river after it passes the village is still further hemmed-in by high rocks, and at one place its whole bed seems a solid impenetrable rock, with not a particle of moveable matter upon it, and at one particular place while the ordinary bed may be 100 feet wide, or more, the whole stream is confined in a narrow chasm of not more than 7 feet wide, through which it rushes with great impetuosity. A foot-bridge has been fixed over this natural curiosity to prevent the accidents that were said to have now and then occurred by reckless persons attempting

to jump over. Lower down the river the banks are densely wooded for some distance, the old Priory of Brinkburn being embowered in wood, and tradition says, a body of foraging borderers were unable to find it, when its inmates, unfortunately for themselves, attracted them to it by ringing their bells in thanksgiving, as they expected, of having escaped the pillaging visit, which, as it was, ended otherwise.

Other places of note border the river, but the great attraction to visitors is the bracing atmosphere, and the ascent to the top of the hills reveals other distant tracts of a like kind. Simon-sides, a somewhat higher mountain lies to the west of it, and on the opposite side of the Coquet, while several miles away are the renowned Cheviots, which form the north-western boundary of the county, and which occupy so prominent a position in the history of the two countries, as being the scene of many a bloody battle, the most remarkable being that of Flodden, where James IV., of Scotland, and the flower of his nobility perished. The vestiges of a camp of much earlier date than that of the famed battle are at one end of the village.

Like most other places of recent growth, which owe their progress to some presiding genius, Rothbury is indebted to one whose name is known all over the civilised world. Sir William Armstrong, the great engineer, whose guns and their projectiles seem destined to alter in a great measure the character of future warfare, has here erected a mansion, which is very appropriately named Craigside, a spacious-looking dwelling snugly ensconced in one of those recesses often met with in a mountainous country, the site being at the base of two hills meeting at right angles, one facing the south the other the west. A considerable tract of fine land tolerably level lies between the mansion and the river. Part of this has been formed into a kitchen garden with forcing houses, and other parts running-up to the waste behind the mansion are kept as dressed ground, and the whole, including a large portion of the former moor, has been enclosed by a formidable wall, which I found was sealed against intrusion. Doubtless, there are good reasons for this, but being the first case of the kind I have met with, I simply mention it, and can give no details of the garden beyond that. I believe most things were found to thrive remarkably well, as, in fact, most plants do in fresh soil, more especially when that soil happens to be at the base of an elevated range of freestone mountains. Not only will Rhododendrons and other American plants do remarkably well in such a position, but most other kinds of trees and shrubs—Vines especially. I think the place had only been established a few years, and from what I could see of it from the railway station, it had all the appearance which great wealth usually commands. Though the right bank of the Coquet on which the mansion looked-out presented the wild character of highland scenery of moderate elevation—naked rock and detached stones grey with age contrasting well with the purple Heath—there was in another direction ample breadths of well-cultivated valley, with excellent crops of corn, &c. The hill against which Craigside is built is one of those detached hills of, perhaps, only a mile or two across, and separated by a like extent of valley from others, and it is a greater distance from the Cheviots, in some secluded glens of which the snow is said to lie all the year round. There is enough of moor at Rothbury to tire the most ordinary pedestrians for one day's travel, and Heather enough to allow a good many excursionists a handful each to carry back with them to their densely populated towns.—J. ROSSON.

#### PTERIS TRICOLOR.

In reply to Mr. Pocock's note, I have to say that I do not grow *Pteris tricolor*. My Fern-growing conveniences are limited, and my object is to cultivate only, or mainly, Ferns from which I can "cut and come again" for decorative purposes—as mixing with flowers in rooms. I am, however, well acquainted with this beautiful Fern, and have tried my hand at it with fair success, at a time when I had a pride in attempting to conquer all stubborn and "miffy" subjects.

My treatment was very similar to that detailed for *Adiantum farleyense*, with the exception of somewhat firmer, more loamy soil. The best-coloured specimen I ever saw was grown by a farmer's "odd man" in pure silky loam and silver sand. On the Continent I observed it luxuriating in simple leaf mould, but this medium is, as Mr. Pearson says, very capricious. Most kinds of leaf mould are vastly improved by a scorch, and this, furthermore, is the best preservative against worms in pots.

Mr. Pocock has given some capital landmarks on the cul-

ture of stove Ferns. Like Cinerarias they never do so well as when moisture rises regularly and freely from below, and when the pots look misty the Ferns grow freely. Another important point is to use water at a regular temperature, say 5° above that of the house. The use of water without proper regard to its temperature is fraught with immense danger, especially in the case of plants of sluggish growth, and those liable to the attacks of insects.—OLD FRIEND.

### ALPINE PLANTS FOR SPRING BEDDING.

Mr. D. THOMSON'S interesting letter containing most useful hints on alpine plants for spring bedding, leads me to send you a list of plants in a narrow winding border forming the lower tier of a rockwork, which at this season have a pretty effect here (Weybridge, Surrey).

I must premise that the Mossy Saxifrages are in large clumps, and most of the other plants strong ones.

Saxifraga nervosa	Saxifraga longifolia
Primula altaica	Primrose
Saxifraga glacialis	Saxifraga hypnoides
Primula auriculiflora	Primrose
Saxifraga atro-purpurea	Saxifraga nepalensis
Primrose	Primrose
Saxifraga altifida	Saxifraga pubescens
Primrose	Primrose
Saxifraga palmata	Saxifraga serratifolia
Primrose	Primrose
Saxifraga Andrewsii	Saxifraga trifida
Primrose	Primrose
Saxifraga elongata	Saxifraga umbrosa ægilops
Primrose	Primrose
Saxifraga cochleata	Saxifraga geranioides
Primrose	Primrose
Saxifraga adscendens	Saxifraga Geum polita
Primrose	Primrose
Saxifraga marginata	Saxifraga hypnoides ice-
Primrose	landica
Saxifraga irrigua	Primrose
Saxifraga pyramidalis	Saxifraga serratifolia
S. sponhemica [hypnoides?]	S. Haworthii
Primula altaica	S. Geum variety

—GEORGE F. WILSON.

### CARTER'S ROUND-LEAVED BATAVIAN ENDIVE. EARTH-BLANCHING.

This is a winter-salad vegetable of great excellence. Sown in July it has afforded a supply for winter use which is especially esteemed. In growth it is particularly compact, less leafy than many other Batavian Endives, and consequently more edible in heart and midrib. Dug-up in November when perfectly dry and the outer leaves carefully folded, it was buried, root uppermost, in the south slopes of Celery ridges, and a month afterwards, and onwards, it turned-out in fine condition, white as milk, crisp as anything could be, sweet as a nut, and with no decay saving in the very outside leaves. By this simple mode of blanching, anyone having a garden may have a salad at Christmas that will add to the appearance of any festive table, and be as good as it looks. Of course, it is equally good under Mnsbroom-house and other modes of blanching, but the main object of this note is to recommend a plan, far from new, but easy and effective.—W.

### KEEPING GRAPES IN WINTER.

THOUGH our experience with the Grape Vine is none of the most extensive, and though our editor, after asking for the ideas and experiences of correspondents on this subject, goes to the bottom of the matter himself, the following notes on the subject may not be altogether unacceptable.

We are fully convinced that large and airy structures are, for various reasons, better adapted for both fruit and plant culture than those of less dimensions. The main point in which large houses are superior to small ones is their capability of containing a large volume of air, which with ordinary attention may be kept in a more equable and healthy condition for the growth, ripening, and keeping of Grapes than it is possible to do with contracted houses. Still, while first-rate examples of Grape-growing may be found in small structures, very poor results may also be found in large houses, though, doubtless, the management has nearly everything to do with it. None of the vineries we have to produce Grapes from are either wide or lofty, the late one being only 10½ feet in width,

height at back 11½ feet, and at front 6½ feet. We had occasion to do a little improvement in the border this autumn, and found that from the surface to the subsoil of iron sand, on which a layer of brickbats had been placed for drainage, it was only 2 feet in depth; and that a little rain which fell during the time a section of the border was open caused 2 inches of water to rise amongst the drainage—if it may be called such. It was not surprising, under these conditions, to find all the roots down in that particular stratum entirely killed. The heating power is measured by a flow-and-return 4-inch pipe, and there are plants grown in the house the whole year.

Our ideas with regard to the general management of late vineries are that there is generally too much water thrown about, even in the height of summer, and too little applied to the roots. Nor are we any advocates for giving unlimited ventilation when the Grapes are ripening: our plan is to give air according to the state of the weather, rather inclining to keep the air circulating amongst the fruit very warm than to allow the temperature to fall for the sake of a rush of air constantly playing through the vinery. We are of opinion that to perfectly finish Muscats to the highest state of perfection, it is one of the first points of importance to let the bunches have as much direct sunlight as possible, though for the black varieties we do not think this is so necessary. As to giving air after the fruit is ripe, for days together the late Grapes now hanging here have had no direct ventilation; only on really fine days is there any ventilation given, except what is almost continually on where the greater number of the plants are stood: except on warm nights the pipes are kept lukewarm. The latest of the fruit was ripe by the middle of October, and has kept as well as any, and better than a good many we have seen this season, as the almost constant cry of gardeners has been that they only wished to see the last of their Grapes cut. We have some Lady Downe's hanging in another house which were ripe in August; the house has been full of bedding plants since the end of September, and consequently the ventilation has not been stinted, yet the mouldy berries cut-out would not average two at the most to each bunch. The same applies to a Muscat at the Black Hamburgh end of the late house: these are not entirely cut yet, and with free ventilation we could wish for nothing better in the way of keeping.

We think it a great mistake for gardeners (in which term amateurs are included) not to be more guided by the many peculiar circumstances each one has particularly to do with, and try less to shape their modes of cultivating various subjects by hard and fast lines, which they may either have found to succeed well in one place, or have seen or read of some one else having succeeded with. The most successful gardeners will be found to differ essentially in their details of working from others, though there are sure to be leading principles the same in all cases. The subject we are more immediately in hand with is no exception to this; and we know of no better mode for obtaining good results in Grape-keeping than just to pick out the principles which may be enunciated by writers as a framework, and to fill-in the details in practice according to local circumstances.—R. B. P. (in *The Gardener*).

### METEOROLOGY OF 1873.

Titchhurst, Sussex, 500 feet above sea level.

	BAROMETER.		THERMOMETER.				RAINFALL.	
	Highest Reading.	Lowest Reading.	Max.	Min.	Mean Max.	Mean Min.	Number of Days Rain Fell.	Rainfall.
January ....	30.00	28.50	55	25	46.10	35.13	22	4.98
February ..	30.40	28.70	47	24	38.22	29.18	12	3.06
March .....	29.98	29.00	65	27	51.5	33.18	21	2.41
April .....	30.10	29.34	74	26	54.00	36.1	13	1.06
May .....	30.12	29.20	77	33	62.20	41.2	13	1.63
June .....	30.08	29.85	80	42	73.27	49.28	12	2.91
July .....	30.04	29.60	85	46	73.7	52.23	15	3.25
August .....	30.04	29.42	88	46	76.16	52.23	16	2.59
September ..	30.26	29.04	68	41	63.17	46.25	14	3.10
October .....	30.20	29.89	73	32	57.28	41.02	22	5.54
November ..	30.18	29.19	61	29	49.37	40.28	15	2.27
December ..	30.36	29.46	57	22	46.10	35.12	8	0.89

MESSRS. DOWNIE, LAIRD, & LAING'S ANNUAL BULB SHOW will commence in the Crystal Palace on the 21st March, and

will continue for a fortnight. Doubtless it will be well worthy of inspection.

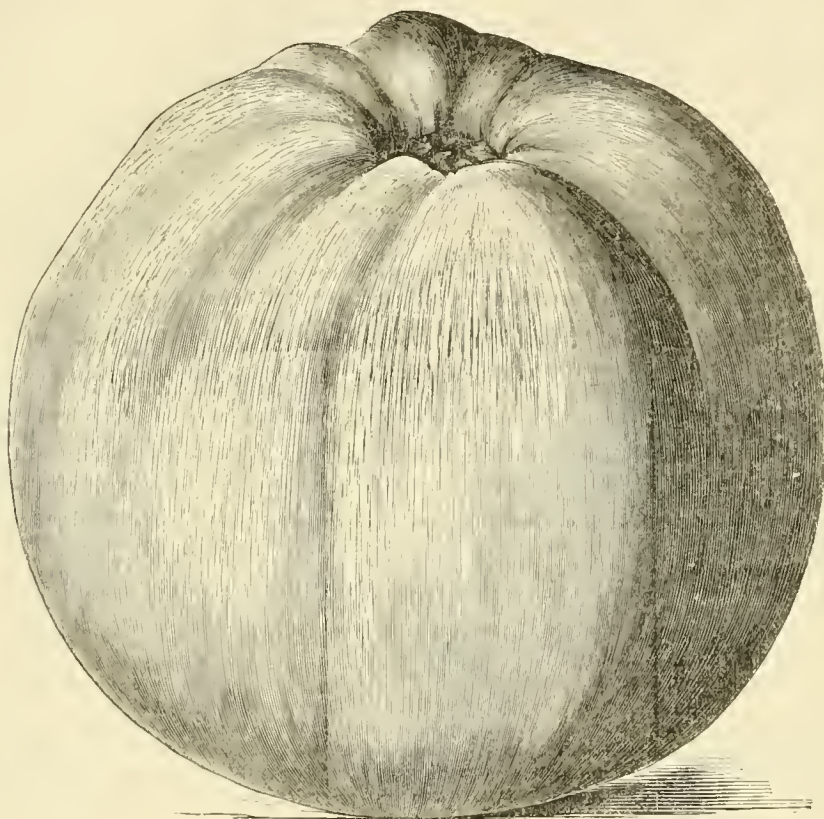
### LADY HENNIKER APPLE.

THE facility with which new varieties of Apples are raised from seed is so great, that, as is usually the case in such instances, there is always a very large proportion of worthless sorts to a very few that are good. In the example before us we have one of the latter class, and one which will take its place among the very best of those Apples of which it is difficult to say whether they are culinary or dessert varieties. In this respect it takes rank with such kinds as Beauty of Kent, Wormsley Pippin, and Reinette du Canada. Attractive in size and in colour, it will make a show in a large dessert, and if

planted; these were reduced every few years. The last thinning was about seven years ago, when thirty-three trees were cut-out. The tree in question was always the favourite, and it has been carefully preserved. The cook says she prefers it to all others. It is largely used here when large and handsome dishes of mixed fruit are required for the dinner-table. Its appearance by lamplight is most telling. It is in use when the large shooting parties are on—viz., from October to February. The tree is very healthy and a great bearer."

### ROSE FÉLICITÉ PERPÉTUÉE AS A STOCK.

I SHOULD like to make a suggestion to the numerous class of Rose amateurs. Has anyone given the old climbing Rose



Lady Henniker Apple.

need were, its flavour would not cause so much disappointment as many other fruits introduced to the dessert merely for the sake of their appearance.

The fruit is very large, roundish, narrowing a little towards the apex, and with blunt angles on the sides, which terminate in prominent ridges round the eye. Skin yellow on the shaded side, with a faint blush of red, which is covered with broken streaks of crimson on the side next the sun. Eye large and open, with short segments, and set in a very deep and angular basin. Stalk very short, set in a very deep, wide, russet cavity. Flesh very tender in the grain, well flavoured, and with a pleasant perfume.

A first-rate Apple, chiefly valuable as a cooking variety, but useful also in the dessert. Season from October to February.

This Apple was raised at Thornham Hall, near Eye in Suffolk, and the account of it furnished by Mr. John Perkins, the present gardener there, is the following:—

"Between the years 1840 and 1850 the late Lord Henniker had great quantities of cider made to give away in the summer months. Several bushels of Apple pips were sown in beds, from which the most promising seedlings were selected and

Félicité Perpétuée a good trial as a stock? From my observation of a few Hybrid Perpetuals that were some years ago budded on this stock, I think it would be well worth a trial. It is a very strong grower and very free rooter, and I think it is likely to be very suitable for Teas and Noisettes. I am aware that the stock has been previously tried, but I should like to know if anyone has tried Tea-scented kinds on it.

Is it anything uncommon for a seedling Rose to come into bud about ten weeks after its appearance above ground? I had one that did so this year, but I did not let it flower.—G. W. BOOTHBY.

### THE AMERICAN BLIGHT ON APPLE TREES.

By T. MACKAY, C.E.

[Read before the Nelson Association for the Promotion of Science and Industry.]

In the spring of the year a slight hoariness is observed upon the branches of many of our Apple trees. As the season advances this hoariness increases, and towards the end of the summer the under sides of some of the branches are

invested with a thick downy substance, so long as at times to be sensibly agitated by the air. Upon examining this substance it will be found that it conceals a multitude of small wingless creatures, which exude it from their bodies, while at the same time they are busily employed in preying upon the limbs of the tree. This they are well enabled to do by means of a long beak, or proboscis, terminating in a fine tubular bristle, which, being insinuated through the bark and the sappy part of the wood, enables the creature to extract, as with a syringe, the sweet vital liquor that circulates in the plant. The sapwood being thus wounded, rises up in excrescences all over the branch, and deforms it; the limb, deprived of its nutriment, grows sickly, the leaves turn yellow, and the tree perishes. The insect which is productive of so much mischief is a species of Coccidæ named *Aphis lanigera*, or woolly plant louse, popularly called the American blight. It was first observed in England in 1787, but it is uncertain if it was, as has been supposed, accidentally imported there from America. Some entomologists say it came from France. At all events, there is little doubt its original habitat was a warmer climate than that of Britain. It has, however, found its way hence from the latter country. The wonderfully rapid development of the aphid has thus been described by a popular writer:—

"It produces in the course of a season eleven broods of young. The first ten are viviparous, or brought forth alive, and consist entirely of females. These never attain their full development as perfect insects, but being only in the larval state (the larvæ are active, and resemble the perfect insect, but are wingless) bring forth young, and the virgin aphides thus produced are endowed with singular fecundity. But at the tenth brood this power ceases. The eleventh does not consist of active female larvæ alone, but of males and females. These acquire wings, rise into the air, sometimes migrate in countless myriads, and produce eggs, which, glued to twigs and leafstalks, retain their vitality through the winter. When the advance of spring again clothes the plants with verdure the eggs are hatched, and the larva, without having to wait for the acquisition of its mature and winged form, as in other insects, forthwith begins to produce a brood as hungry, as insatiable, and as fertile as itself. Supposing that one aphid produced a hundred at each brood, she would at the tenth brood be the progenitor of one quintillion (1,000,000,000,000,000) of descendants."—(Paterson, "Science Gossip," 1855.)

It will thus be seen what very formidable foes these insignificant-looking little pests are to our orchards, and two questions naturally arise—first, What is the cause of their being so? and second, Where can a thoroughly radical remedy be found against their ravages?

There are some particular kinds of Apple trees more attractive to these insects than others. Whether this may be attributed to the particular colour of the bark, a deficiency of lime, the presence or absence of certain juices in the sap, or to over-cultivation or climatic influences creating an abnormal condition of the tree, and consequently rendering it more susceptible to parasitical disease, it is hard to say; but the blight now treated of is evidently more destructive in semi-tropical climates, such as Australia and New Zealand, than in Britain, owing in a great measure to the effect which the frequent hot sunny days, succeeded by the cold frosty nights of early spring, have upon the circulation of the juices of the tree, unduly stimulating their flow in the daytime, and abruptly checking their current at night, by which they burst their vessels and become the food of such insects as have been already described, the insects being often mistaken for the cause of the disease, while they are really the effect of it.

That the action of the American blight, the scale blight, and the Ciccadæ on our Apple trees is, to a great extent, the effect of the last-described condition, there cannot be much doubt.

Assuming, therefore, such an hypothesis to be correct, it is clear that, in place of the various nostrums or specifics—such as the preparations of carbolic acid, corrosive sublimate, kerosine, lime, or sulphur, which are recommended for washing the diseased trees, or the plastering of the infested parts with moistened clay, all of which are very transient in their effects—a non-liable stock to disease should be selected on which to graft any liable variety the grower may desire to cultivate. That there are such stocks proof against blight there are several authorities for stating, and, moreover, there is a member of this Association, Mr. Lightband, æn., living in our midst, who has successfully treated the disease by grafting

an anti-blight tree, using a variety of winter Apple, on diseased ones.

In Darwin's book, "Animals and Plants under Domestication," vol. ii., chapter 21, "On Natural Selection," he says:—

"From some unknown cause the Winter Majetin Apple enjoys the great advantage of not being infested by the coccus."

"On the other hand, a particular case has been recorded in which aphides confined themselves to the Winter Nelis Pear, and touched no other kind in an extensive orchard. . . . Liability to the attacks of parasites is also connected with colour."

Considerable controversy has lately been carried on in the pages of the "Australasian" on remedies for the American blight, and much has been said in favour of using stocks of the Majetin Apple as a sure prevention of the disease. A Mr. Wade, of Pomona Place, Launceston, Tasmania, in a communication on the subject to the same paper, says:—

"That on his arrival in Tasmania he devoted especial attention to the check and prevention of Apple blight, and one of his first ideas was to raise stocks from the seeds of those sorts not affected by blight. He chose the seeds of the Siberian Bittersweet, and the result was success far beyond his most sanguine expectations, for barely 1 per cent. of stocks raised from those seeds were in the least affected by blight, while some alongside, raised from promiscuous seeds, were destroyed by it, and that he has continued the system for several years with the same unvarying success."

Mr. Lightband's operations above referred to have been most successful. The juices of the fresh graft after a while permeated the whole of the diseased tree, infusing, as it were, a new life and fresh vigour into it. The aphides avoid infesting it, the leprous bark exfoliates, and a clean sound bark takes its place; the tree continuing to bear two kinds of fruit—that of its original stock, as well as of the anti-blight graft. These, however, will no doubt in time merge their respective types or qualities, the one with the other.

From these circumstances it is not too much to say there are good grounds for assuming that, in the first place, as a prevention of the disease, the selection of an anti-blight stock on which to graft the particular kind of Apple desired to be grown will be the best means of insuring a healthy fruit-bearing tree; and in the second, as a cure for trees already affected with the blight, the inoculation process of Mr. Lightband is the most rational plan that can be adopted.

It is not the Apple tree alone, however, that such parasites persecute. The Pear, the Peach, the Apricot, and the Nectarine, as well as the smaller fruits, also the Grape Vine and the Hop plant, are all, more or less, infested by a species of one or other of them; and those who desire to derive both pleasure and profit from their fruit gardens or Hop grounds should not fail to seek for and apply proper remedies in good time.

In conclusion, it may not be out of place to advance a few words on the bearing which the theory of natural selection, or the survival of the fittest, has upon the subject now under consideration. It is obvious that without an operating cause—one, doubtless, amongst many, such as the parasitical influence of aphides on fruit trees in enforcing, as regards the latter, the necessary process of renewal by stimulating horticulturists to adopt improved methods of cultivation, as well as instinctively, as it were, to select such stocks as will prove the fittest against the destructiveness of these pests—with little exception many fruit-bearing trees would be left untended, and, as a natural consequence, would inevitably degenerate, and eventually dwindle away. In this will be recognised one, perhaps, of the many purposes designed for these tiny insects by that Providence Who hath numbered the very hairs of our heads, and without whose knowledge a sparrow doth not even fall to the ground.

The Vice-President having placed his microscope at the service of the meeting, the author was enabled to illustrate very clearly the peculiar nature of the American blight, as well as the scale blight. He also exhibited several branches of Apple trees from Mr. Lightband's garden, showing the curative effect of that gentleman's anti-blight grafting treatment.

A discussion ensued, in which several members took part.

Mr. Elliot mentioned that when on a visit at the Hon. W. Robinson's, in the Amuri, three years since, while walking through the orchard one morning he discovered a tree affected with the American blight, much to the disgust of the gardener. The trees in this orchard were at the time ten years

old. No fresh tree or graft had been imported into it for at least seven years, and the nearest fruit garden was twelve miles distant.—(Communicated by W. SWALE, Canterbury, N.Z.)

### HEATING—FUEL.—No. 2.

Gas having the greatest heating power of all ordinary combustible substances, it must necessarily be the best for heating hothouses or greenhouses by the circulation of heated water in iron pipes. I make no question of the superiority of gas over coke and coal, but whether it is equal in cost, or less or more expensive than either of these two, I am not in a position to ascertain, therefore I ask for information on this head.

In heating by gas all the heat generated by the combustion of the fuel can be utilised. The boiler or apparatus being entirely within the house, we not only secure the heat of the water in the pipes to be given off by them, as in other boilers heated by coal or coke, but the heat that is given off by the surface of the boiler itself, which in some cases, as when the boiler is in a shed outside the house, is equal to as much heating surface as would warm one or more of the compartments heated by the hot-water pipes. The great fault of the majority of our hot-water boilers is that their setting is heated quite as much as the water in the boiler, and the heat is all the time given off in space outside the structure, and is therefore sheer loss. No one would, neither do I, advocate the fixing of boilers so as to have the stokehole within a greenhouse, but I see no objection to having a properly-constructed boiler entirely within the house, yet stoked from the outside, so that the dust and smoke consequent on combustion may be kept from the plants. To have the boiler within the house is to derive the full benefit of the heat; to have the boiler outside is to lose the whole of the heat radiated from the boiler's outer surface, which in some cases is nearly, if not fully, equal to the surface acted on by the fire.

Quite different is heating by gas to that by coal or coke. There is no dust or dirt, no frequent attention, the trouble is almost nothing, no cost of carriage of fuel beyond the first provision, no uncertainty of heating, the heat being the steadiest and most constant. On these grounds gas-heating is to be preferred to any other mode.

The boiler being within the house, and the air which is required for combustion derived from the house instead of from the external air—as in the case of boilers fixed outside—is this an evil or otherwise? The heating power being in proportion to the air consumed, and gas being the most powerful agent of all, it may be that we lose as much by taking from the internal warm air for combustion, admitting cold external air to supply its place, as is gained by having the heating power within the house. There may be some loss of heat in this way, for it is only just to consider that the displacing of warm air by cold must lower the temperature in which this takes place; but is not the displacing of warm vitiated air (as it all is in a confined structure) by the admission of cold fresh air, counterbalancing? This, if an evil, could be overcome by supplying the combustion chamber direct from the external air, moderating the current of air by a screen or screens of perforated zinc, and in this case no loss of heat would be experienced, the fumes of the gas being properly carried off by a securely-jointed pipe or funnel to the external air.

It is generally considered that gas as a mode of heating is only suitable for small structures, but the reasoning by which such a conclusion is arrived at puzzles me. Because gas is at present only used for lighting and for heating on a small scale, what have we to be guided by in concluding it not suitable for heating on a large scale? Surely nothing but the supply, for if it answer—and there is no question about it—for small houses, it is evident it would do so equally well for large structures. The only thing would be to have larger apparatuses and separate ones for every structure, which is one of the greatest points in favour of gas as a fuel in comparison with either coal or coke. The heating by gas would enable us to dispense with reserve or duplicate boilers, without which it is admitted our very best makes of hot-water boilers are not safe. There is always an anxiety, especially in severe weather, attached to heating by one boiler which it is not pleasant to experience, to say nothing of a breakdown of the heating apparatus at such a time. By gas-heating we entirely relieve ourselves of the anxiety of a breakdown; we save the duplicate boiler, equal to the cost of furnishing every compartment with a separate heating apparatus; we are enabled to dispense with

a vast quantity of flow and return pipes to and from the boiler, which in many cases are equal to a large extent of heating surface, at times corresponding with the heated surface utilised; so that a considerable saving of fuel is effected by heating the radiating surface only, none being lost in supply and return pipes. When we add the value of the piping that is taken up in flows and returns, and the necessary elbows and costly valves, it is clear there is a saving in first cost of no mean amount, probably equal to half the first cost of an apparatus for heating each structure separately by gas.

Then when but little heat is required, the fire that has to be kept going for the heating on the one-boiler system of very little piping is something enormous compared with the work done, so much of it being expended in heating the water in the boiler (which is the same in quantity for a large as for a small extent of piping) and the connection pipes; so that we are left to wonder why in point of economy we departed from the principle of heating each house separately and adopted the one-boiler system. We cannot get more from the fuel than the heat there is in it; and how a large furnace should give more heat than four or half a dozen smaller ones, the quantity of fuel being the same, is only to be accounted for by the extravagant manner in which we employ the fuel, half its heat being expended on the setting; consequently we have almost as much loss by the setting of a smaller boiler as in that of one six times larger: hence the greater heating power of a large as compared to a small boiler furnace.

Every house should have its separate heating apparatus, which should have a boiler so constructed that the whole of the heat, less that below the temperature of boiling water (212°), afforded by the fuel, will to the utmost extent be given out and imparted to the water; and this being the case, as I see no reason why it should not, the necessity or value of the one-boiler system and accompanying duplication vanishes. Gas, because it enables us to heat every structure independently of another, because there is no waste of heat or fuel, and because of its certainty and steadiness of action, cleanliness, and easy management, I hold to be the best mode of heating, and therefore preferable to all others.—G. ABBEY.

### INFLUENCE OF THE STOCK ON THE SCION, AND VICE-VERSA.

[Essay Read at a Meeting of the American Pomological Society.]

BOTH theory and practice teach us that the relationship existing between the root and the top of a tree cannot be impaired to any great extent by any artificial intervention of man. The very moment that an inserted bud or graft commences to granulate and then unite, that moment the two parts of the embryo tree struggle, as it were, for the mastery. That is, certain idiosyncrasies, inherent either in the branches of the one or the roots of the other, will form a leading feature in the mature plant. Abundant proof of this is afforded by examining the roots of nursery-grown Apple trees, whether budded or grafted. Take, for instance, some well-known variety, as the Bellefleur, and the roots will be found uniformly long, slender, and very fibrous; other kinds will prove exactly the opposite. If we place a graft of some well-marked variety upon any ordinary stock, say 5 or 6 feet high, in a few years certain peculiarities of the bark will be found extending down from the branches to the body of the tree; as is instanced in the Newtown Pippin Apple, and Van Mons Léon le Clerc Pear. Another curious feature respecting the influence of the scion upon the stock, is noticeable in some of the so-called "sports," or variegated-leaved plants.

During the past season [1872], a Mountain Ash, upon which was budded a variety with variegated leaves, commenced to push forth young shoots from the main body of the tree, below the point where the bud was inserted. In every case these had variegated leaves. Now, in view of the fact that these adventitious buds were there in advance of the original variegated bud, the presumption is that they were created green, and their normal condition yielding to the controlling influence of the new branches, caused the change to occur by the flow of sap from above.

A still more remarkable case than the one above cited, was related some time since. Scions of a diseased Horse Chestnut with yellow leaves were worked upon strong, healthy young trees. Sometime thereafter, upon examining the stocks where the scions had failed, young shoots were found down the body bearing the identical yellow-hued foliage; and yet, where the

buds originally inserted had "taken," they produced perfectly healthy green leaves.

This disease, for I hold that all variegation is in some manner unhealthy, had evidently been communicated from the bud or scion to the stock before the death of the former, and for a short time during its vain struggle for existence, contaminated the parts below.

The Scientific Committee of the Royal Horticultural Society also records a like case with a yellow-leaved Laburnum. After the inserted bud had died, variegated shoots were noticed issuing from the stock both below and above the inserted point; and Dr. Masters, the English botanist, has stated that an Abutilon had thrown out variegated shoots after grafting with a variegated variety, but ceased to do so after the inserted graft died.

But, in some instances, the stock exerts a marked influence upon the scion, thus showing the co-operative system in use between them. The *Gardeners' Chronicle* mentions an instance of a couple of Muscat Vines worked on the Black Hamburgh, in the same house with a Muscat, on its own roots. Those worked on the Hamburgh start fully five or six days in advance of the one on its own roots, although they are nearly a fortnight behind the Hamburghs they are worked on. It is a curious fact that there has never been seen any difference in the ripening season, nor any effect on the fruit.

As we stated in the commencement, certain marked peculiarities will, sooner or later, always make themselves known; sometimes it will be one thing, and again another and totally different feature assumes the superiority. The governing cause, involved in mystery as it is, to a certain extent affords us a clue by means of which we may study a very useful lesson in plant life.

We know that all vegetable growth arises from a cell, and what are termed young shoots, leaves, blossoms, &c., are in fact but an accumulation of cells, which, in time, develop woody fibre and other organs. The propagator of new varieties knows that a single bud, or a section of a young branch, may be inserted in a different tree, and these will unite and produce fruits and flowers similar to the kind from which the bud or graft was taken. Now, let us inquire into the changes that occur during this growing process, or, as horticulturists term it, "taking." Between the wood and bark is where active growth takes place, and the layer of young cells found here is known as the cambium layer. All growth, of whatever nature, is by cells, the origin of which is, however, at present unknown. But this cell-growth is accomplished by small protuberances making their appearance on the walls of the older cells, and these rapidly increase, and again, in turn, assist in the formation of others, and this is carried on so long as growth takes place. Without going into a long dissertation upon the subject of cell-growth, which would form a long essay in itself, I will merely state that the question has been asked in relation to a budded tree, Can the cells, at the point of union, be partly of one variety and a part belong to another? My theory is, that a cell singly is entirely a component part of the variety from which it originates, either from the scion or stock, and is invested with all the powers and principles inherent in that part. A single cell cannot be of two varieties, but a collection of cells, as, for instance, the cellular tissue, may be formed partly of both. The vascular or fibrous tissue is governed by the same laws, each separate, but the little bundles of woody tissue uniting by their outside covering or walls, thus forms a compact mass of wood, and the bud or graft has taken, which ultimately forms the future tree.

A bud is, in fact, an embryo tree. It contains within its protective covering all the elements of tree growth, with all the organs of vegetation and reproduction intact. Therefore, when a bud is inserted beneath the bark of another plant, the cellular growth at once takes place on both sides, these unite by their outside walls, and the so-called sap commences to circulate in the intercellular passages from one to the other. It is, therefore, no wonder that certain peculiarities embraced in the root may be found developing in the scion or top, and *vice versa*. That the scion is enabled to reproduce its kind, is due to the fact that its young growth is merely an increase of cells already formed, and the variations alluded to at the commencement of this paper are the result of constant currents of sap flowing between the two remote portions of the tree, and at the same time imbuing the one with certain marked characters contained previously in the other. Thus, in a somewhat hurried, and I fear very imperfect manner, I have alluded to the influence of the stock upon the scion, and *vice versa*.

This interesting subject is by no means all theory, as many suppose, but is the result for the most part of close examination by means of a powerful lens. Future investigation will, undoubtedly, reveal many novel features which we now know not of, and to accomplish this fully the patient student of horticulture is asked to join the botanist in the pleasant task.

But there is another and more popular aspect to this subject, the relative advantages of certain stocks for particular species of plants. Under this heading we may take, for example, the Plum worked on the Peach. Prejudice and distrust on the part of many cultivators have done this operation great injustice. To the owner of a heavy soil, where the Plum root thrives luxuriantly, Peaches should be planted with caution; but, on the other hand, in the great Peach districts, with a light mellow soil, the Peach root will succeed far better than the Plum. Peaches always make a large number of strong fibrous roots, and return to the top a vast amount of nutrition. The junction in certain varieties of Plum on Peach roots is perfect, and the tree is long-lived and healthy.

The testimony of some of our most noted pomologists goes to show that the practice is correct, and a careful examination plainly indicates that the theory is faultless as well.

The subject of dwarfing fruit trees is not properly understood. The Pear worked on Quince roots certainly dwarfs the tree to a certain extent, and for a few years; but is the process caused by some inherent property contained in the Quince? We think not. Once allow the Pear to throw out a few roots above the point of junction, and the tree becomes a standard. The abundance of sap or nourishment gathered up by the roots and forwarded to the top causes in most cases a larger and finer growth of fruit, thus showing that the Quince is adapted to these kinds; but take an uncongenial variety, and mark the result. The fruit is often in such cases worthless. Years ago we were told that budding Cherries on the Mahaleb stock would cause the trees to become dwarf. Little did these propagators know that when they annually pruned their trees, this was what dwarfed them, and not the root. The junction in this case is always perfect, and it is a well-known scientific fact that excessive pruning causes debility in a plant, and that when vitality is checked the tree becomes dwarf as a matter of course. Excessive growth and productiveness seem to be generally antagonistic. A dwarf tree, after the first vigorous growth is over, will, if healthy, produce good crops and mature a reasonable amount of new wood. Certain varieties of Pears, as, for instance, the Bartlett, never unite properly on the Quince stock—the cellular tissue of each never seems to make a perfect union. Very many trees that we have examined under a strong lens reveal a marked line between the cell-growth of the two, and not, as in the case with other kinds, a lengthening of both cell-growths, one up and the other down, so that it is very difficult to determine where the exact point of insertion really is. There are causes, over which we have no control, that debar us from dwarfing some varieties, but science has not yet solved the mystery.—JOSIAH HOOPES.—(*Horticulturist*.)

## HOLLAND HOUSE,

THE RESIDENCE OF BARONESS HOLLAND.

Not one other among "the stately homes of England" have had either for its possessors or its tenants such a series of totally distinct characters, mostly celebrities, but differing in their opinions as widely as in their positions. A volume could be filled with anecdotes and stirring details, rendering the continuous narrative interesting, which told how the house passed from tenant to tenant ever since Geoffrey de Monbray, Bishop of Coutances, and Aubrey de Vere, Earl of Oxford, held the manor in the time of William the Conqueror. A mere enumeration must suffice in our columns. Sir Walter Cope, James I.'s money-lender, bought the estate of the last of the De Veres, and built, in 1607, the present mansion. His daughter brought the estate to the Earls of Warwick. During the Parliamentary War General Fairfax was its tenant, and tradition tells that he and Cromwell and Ireton held conferences beneath its trees. Addison was husband of its proprietress in 1716. It had various other tenants, and of these were William Penn, the Quaker, politician, and colonist; Mrs. Morrice, daughter of the exiled Bishop Atterbury; and Shippen, the incorruptible Jacobite. In 1762 it was sold to Mr. Henry Fox, ancestor of the first Lord Holland, and it has continued in possession of this family.

The grounds of Holland House have been several times

noticed in our pages by Mr. Keane, and it is not surprising that such a fine old place, so near London too, should receive so much attention; but now that the Princess of Liechtenstein's splendidly illustrated work\* has brought it so prominently before the public, it may be useful to reproduce some of Mr. Keane's notes on the gardens, to appreciate the beauties of which, however, the summer, not the winter, is the proper season. The flower beds, of course, are now no longer bright with many hues and beautiful combinations of flowering and fine-foliaged plants; but even in their present more sombre state, from their neatness, and being set in smooth green sward or well-kept Box edgings—some fifty years old—they are pleasing to the eye, and afford a good idea of how effective such beds skilfully planted must be when at their best. Conifers, save some fine old Cedars, are but few, for the London smoke is destructive to them as to many other plants,

though Holland Park is not more exposed to it than other places at a greater distance from the densely-peopled portions of London. Still it is well known to travellers by the Great Western road that if there is a fog, it is always at its thickest at Holland Park, and gardeners in the country know little of how smoke-begrimed is a plant after such fogs as we had in the end of last year. Besides, Holland Park is slowly but surely becoming engirdled with houses, and as time goes on the bonds will grow tighter still. The old Elms, in which the rooks love to congregate, and other deciduous trees, are now ganut and leafless, but in summer form noble masses of verdure.

We will now quote from Mr. Keane, but it must be borne in mind that he wrote in summer.

The grounds of Holland House are entered from the high road between Kensington and Hammersmith, and the approach



HOLLAND HOUSE—WEST FRONT.

is through an avenue of Elm trees. Before the south front is a large square bowling-green terrace, bounded by balustrades adorned with flowers in vases and Orange trees, and in the centre with a large basin fountain. Before the east front is the carriage square.

Before the north front is a terrace walk 200 yards long by 5 feet wide, with a colossal statue of Charles James Fox, which overlooks it from the highest point. Parallel with the east side of these grounds runs a long broad walk under a grove of fine old Elm trees, called Louis Philippe's walk, from the circumstance of the King of the French having visited Holland House and grounds at the time it was made. The ground rises on all sides to a beautiful knoll in the park, crowned with an old and picturesque Cedar of Lebanon. Fine old Cedar and other trees creep-up the slopes, and form groves around the base and along the valley—not thick groves of gloom, but groves in which the forms of the trees are fully developed, and, being planted at various distances apart, producing glades of pleasing landscape scenery.

Before the west front of the house (of which the accompanying is a representation) is a flower garden, a rich parterre and beautiful pattern, the walks brimful of gravel, and the beds overflowing with all the most choice and best sorts of flowers.

It is arranged in the best manner to give the pleasing variety the contrast, and the distinctness of colours which are clearly and expressly defined throughout the composition, and is seen to advantage when the whole is overlooked from the terrace, surrounded by balustrades, on the top of the banqueting room. It is protected on the north side by a wall, and on the west by the ruins of what had originally been a stable, which is now made, by the stables having been arched with masonry and covered with Ivy, to resemble a ruined aqueduct.

Of the portion called the Dutch garden we are enabled, through the courtesy of Messrs. Macmillan, to give a view taken from the south-west side, outside the Ivy-covered arches referred to. The bust seen in the engraving is that of Napoleon I., opposite to which is an octagon marble basin, and next the wall the embowered seat of Rogers the poet, with these lines over it—

"Here Rogers sat, and here for ever dwell  
With me those pleasures that he sings so well."

The whole of this section of the garden is enclosed by a dwarf Box hedge. Outside of the arches is a small terrace garden in Box, and beyond it, on a lawn, several Apple trees, on which the Mistletoe is flourishing.

The Lily Pond garden is simple in design, with an oval pond surrounded by four L-shaped corner beds, and the pond in

\* Holland House. By Princess Marie Liechtenstein. Macmillan & Co.

summer is covered with the beautiful *Nymphæa alba*. There is a corresponding panel, in which the centre is an oval bed, which in summer is filled with Cannas and other subtropical plants.

The conservatory is 60 feet long, furnished with some specimens of Camellias planted in the border, and with the large Orange trees that adorn the square before the south front of the house. Attached to the conservatory on the north side is a banqueting room of handsome proportions, and furnished in the best style of art and ornamentation. Close to it, on the east side, is a tower, which is approached by a flight of steps; and from the south side of the conservatory is a colonnade 66 yards long, running east, which is continued to the front of Holland House. By this means a communication under cover is opened from the house to the conservatory, then to the banqueting room, then to the loggia, then to the tower, and home by the flower garden, by the pleasure ground, or by the terrace walk, along the whole length on the top of the colonnade.

Passing from the square where Orange trees and other greenhouse plants stand during the summer months, we enter the orchard house, thirty yards long. It contains Peach and Nectarine trees planted against the back wall and in pots, besides Plum and Cherry trees in pots. Having crossed the green drive embosomed in a grove, we enter a range of glass 45 yards long heated by hot water, and divided into five parts, consisting of vineries early, succession, and late, and Peach houses. Besides these there are two ranges of heated pits, and frames filled with an abundance of bedding plants for the summer.

Holland House is surrounded by pleasure grounds so nicely connected with the park that a beautiful and varied landscape is produced, bounded by deep shady groves that form the framework of this delightful picture. In these well-wooded grounds are many fine old trees. An Elm measured 17 feet 3 inches in girth [a re-measurement this year gave 18 feet], and two Cedars of Lebanon 14 feet 9 inches, and 12 feet 6 inches each at 2 feet from the ground.

Before concluding these remarks we must notice a green drive, which extends half a mile in length towards the Bayswater Road, forming, in fact, a grove of Elm, Lime, and other trees, and the Lime-tree walks in proximity to the house must be delightfully shady in the summer heats. We have to add that the keeping of the gardens reflects great credit on Mr. Dixon, who has their management, and that the visitor meets with every attention at his hands. Further particulars respecting this place and the summer bedding-out in former

years will be found in our new series, vol. ix., p. 256, and vol. xxiii., p. 150.

## NOTES ON VILLA AND SUBURBAN GARDENING.

MANAGEMENT OF PLANTS IN ROOMS.—When, as often, plants get slightly injured by frost, cold water should be sprinkled on

them before the sun reaches them, and this sprinkling ought to be continued as long as any appearance of frost remains on the foliage. Water is often very injudiciously applied to plants in rooms, and the evil arises from falling into the opposite extremes of too much and too little. Fear of spoiling the carpet, forgetfulness, and sometimes a dread of injuring the plant, are the chief causes of an under-supply of water. On the other hand, many have a notion that such plants should have water every day and at stated periods, without inquiring whether it be necessary or not. Saucers or pans are often placed under flower pots to prevent the water which escapes from soiling the apartment, but in these cases the saucers should be partly filled with gravel to prevent the roots from being soaked with water, or the water which lodges in the saucer should be removed. Fanciful and elegant baskets of wire or wickerwork, and plant-tables, are perhaps preferable to common stages. The baskets should have a pan of zinc, copper, or other metal, and over this a bottom pierced with holes, or a grating of wire, on which the pots are to be placed. The pan is generally about an inch deep, and has a plug or other contrivance by which the surplus water may be drawn off. Plant-tables can be constructed in the same manner, and admit of an endless variety according



THE DUTCH GARDEN AT HOLLAND HOUSE.

to the taste of the owner. In either of these the pots may be wholly concealed by green moss or cut paper, so that nothing but the plants themselves may appear. Water is as essential to the leaves as it is to the roots, because they are liable to get dirty, and thereby to be injured. They should therefore be frequently washed over with a syringe having a rose to it; and in order to perform this operation properly the plants must generally be removed to some other apartment, where they should remain till they are dry. In winter this operation must be performed in mild weather, only it should be done in an apartment not colder than that in which the plants usually stand, and the water should be about milkwarm. When the plants are in baskets or on tables they can be removed and washed without deranging their order. Plants which have large and leathery leaves, such as Oranges, Pittosporums, Camellias, and Myrtles may be washed with a sponge, or if very foul with soap, and the soap carefully removed by pure water. Loose dust may be removed by a pair of bellows. Attention to cleanliness greatly increases the vigour of the plants.

Bulbs of most sorts flourish in rooms with less care than many other kinds of plants. Hyacinths should be planted in October.

In preparing pots for them select such as are about 4 inches deep and 3 inches wide, put a bit of rotten dung in each pot, fill each pot up with light rich soil, and plant the bulbs so shallow that nearly half the bulb stands above the soil; plunge the pots in the open air, and cover them 6 or 8 inches deep with rotten bark. During spring take them out as they are wanted to come into flower, and set them in the window of a warm room where they will be fully exposed to the sun. Those who do not possess a garden may set the pots in a cellar or outhouse, or in the corner of a yard, and cover them with light soil or sand until they are wanted to bring into the room to flower. When the leaves begin to decay after they have done flowering, give them no water. When the leaves are dead take them out of the soil and remove the offsets, and lay them in an airy situation until the time of planting. If grown in water-glasses they require to be placed in a light airy situation, and the water will require to be changed once in three or four days. If drawn-up weakly it will be necessary to support the stems with sticks, split at the bottom so as to fit the edge of the glass at the top. This, however, will not be necessary if they are kept in a light and airy situation. When out of flower plant them in pots of soil to perfect their leaves, and treat them as above; they will flower again the succeeding year. This is the favourite mode of house culture, and the bulbs best adapted for it are Hyacinths, Polyanthus, Narcissus, Van Thol and other Tulips, Crocus, Persian Iris, Narcissus, Colchicums, Guernsey Lily, Jonquil, and others. Dark-coloured glasses are the best, as they prevent the light from interfering with the roots of the plants. Rain water is preferable to any other, and it should be changed frequently to prevent its getting putrid, and in performing this operation care must be taken both in withdrawing and in replacing the roots. This is necessary till the flowers have expanded, for after this the plants may be left undisturbed till the flowers have decayed. The water which is supplied must not be colder than that which is withdrawn or than the general temperature of the apartment. Much heat is not necessary for such plants, because they flower better the more slowly their vegetation proceeds. Chimney-pieces and other warm situations are not nearly so well adapted for these bulbs as stages near the window, or the window-sill itself.

At this season, when there is little to be done in the way of cropping, everything around the villa should be made clean and neat. All vegetable refuse may be collected into a heap to rot for manure: nothing of this kind should be lost. Vacant ground, if any, may be turned-up rough to be fully exposed to the action of the weather. This is especially necessary for strong soils, in order that the frost may separate their parts and render them more friable. When manure is applied, a little at a time as often as an opportunity or the nature of the crops will allow, is better than when the ground is overloaded with dung.

**VEGETABLES.**—If a sowing of Peas and Beans has not yet been made, no time should be lost in getting them in while the weather continues favourable.

**FRUIT.**—Continue to prune any fruit tree if not done last week, taking care, however, to keep the spurs short and close, otherwise they soon become long and give the trees an unsightly appearance.

**FLOWERS.**—Remove everything unsightly from the flower plot. Nothing looks worse than to see decayed stems of plants standing at this season. Bulbs, if any, that have made their appearance above ground should be protected in the event of frosty weather; but not unless, as this has a tendency to make them weak and tender.

It has been proved by severe winters that evergreens are extremely hardy and will bear any severity of frost. All those evergreens considered most tender, such as Portugal Laurels, Rhododendrons, &c., were observed to brave the frost unhurt, when they were placed in high unsheltered places, or facing the east or north. It was observed also, that those evergreens were destroyed whose aspect was south and west, and which lay in warm and sheltered situations. The cause is this: The shrubs did not suffer which were not subject to alternations of heat and cold, while those which lay in warm situations, being thawed by the sun's rays during the day, could not endure the sudden chill of returning frost at night.—W. KEANE.

## WERE THE FRUITS MADE FOR MAN, OR DID MAN MAKE THE FRUITS?

(Essay by Professor Asa Gray, read before the American Pomological Society.)

THESE need not be taken as mutually exclusive propositions; for as "God helps those who help themselves," and man's work in this respect is mainly, if not wholly, in directing the course or tendency of nature, so there is a just sense in which we may say "The art itself is nature," by which the greatest triumphs of horticultural skill have been accomplished. Moreover, I am not one of those naturalists who would have you

believe that nothing which comes by degrees, and in the course of nature, is to be attributed to Divine power.

The answer I should give to the question, as we thus put it, is—

1. Some fruits were given to man as they are, and he has only gathered and consumed them. But these are all minor fruits, and such as have only lately come within the reach of civilised man, or are not thought worth his trouble. Huckleberries and Cranberries, Persimmons and Papaws are examples taken from this country. Whether even such fruits have or not been under a course of improvement irrespective of man, is another question.

2. Others have come to man full-flavoured and nearly all that he has done has been to increase their size and abundance, or extend their season. Currants and Gooseberries, Raspberries and Blackberries, Chestnuts, and, above all, Strawberries, are of this class.

3. But most of the esteemed and important fruits, as well as the grains, have not so much been given to man as made by him. The gift outright was mainly plastic raw material, time, and opportunity. As to the cereal grains, it is only of the Oat that we probably know the wild original; of Wheat there has been an ingenious conjecture, partly but insufficiently confirmed by experiment; of the rest, no wild stock is known which is not, most likely, itself an escape from cultivation. Of some of them, such especially as Maize, not only can no wild original be indicated, but in all probability none exists.

So of the staple fruits. Of some the wild originals can be pretty well made out, of more they are merely conjectural; of some they are quite unknown, and perhaps long ago extinct.

To cite examples in confirmation or illustration of these points, to note how very ancient some of our varieties of common fruits are, and how very recent certain others—to consider how they have originated, with or without man's conscious agency, and how they have been perfected, diversified, and preserved, mainly under man's direct care—would be to expand this note into an essay, and yet to say nothing with which pomologists are not familiar.

It would be curious to speculate as to what our pomology would have been if the civilisation from which it, and we ourselves, have sprung had had its birthplace along the southern shores of our great lakes, the northern of the Gulf of Mexico, and the intervening Mississippi, instead of the Levant, Mesopotamia, and the Nile, and our old world had been opened to us a new world less than four hundred years ago.

Seemingly, we should not have as great a variety of choice fruits as we have now, and they would mostly have been different, but probably neither scanty nor poor. In Grapes, at least, we would have been gainers. Our five or six available species, of which we are now just beginning to know the capabilities, would have given us at least as many choice sorts and as wide a diversity as we now have of Pears; while Pears would be a recent acquisition, somewhat as our American Grapes now are. Our Apples would have been developed from *Pyrus coronaria*; might have equalled anything we actually possess from *Pyrus Malus* in flavour, though perhaps not in variety, if it be true, as Karl Koch supposes, that the Apples of the orchards are from three or four species. Our Plums would have been the progeny of the *Chicasa*, the *Beach Plum*, and our wild red and yellow *Prunus americana*, which have already shown great capacity for improvement; our Cherries might have been as well flavoured, but probably not as large as they now are. But instead of Peaches and Figs, we should be discussing manifold and most luscious varieties of Persimmon and Papaw, the former, probably, equal to the *Kaki* just acquired from the far east. As to Strawberries, Gooseberries, and Currants, we should have lost nothing and gained something, as we possess several species, besides the European types themselves; as to Blackberries and Raspberries, we should have been better off than now, by the earlier development and diversification of our indigenous species. And we might have had all our finest Strawberries a thousand or more years ago, these having come from our American types *Fragaria virginiana* with its varieties (which, as well as the old-world *F. vesca*, occurs all across the continent), and *F. chilensis* which ascends the Pacific coast to Oregon.

Then we should consider how much earlier our race, with an American birthplace, would have been in possession of Tomatoes, of the Pine Apple, of the Cherimoyer, and the other Custard Apples, of the Star Apples, and other sapotaceous fruits, of Chocolate, of Lima Beans in all their varieties, of Peanuts; not to speak of Potatoes, Sweet Potatoes, and

"Jerusalem" (that is, Gira-sola or Sunflower) Artichokes; the last supplemented by our Ground-nut (*Apios tuberosa*) would have been the first-developed esculent tubers, and would probably have held their place in the first rank along with Potatoes and Sweet Potatoes of later acquisition.

Among the causes and circumstances which have given to the fruits of temperate climates of the old world their pre-eminence, opportunity is one. How many potential fruits of value lie undeveloped in this country we know not, and more, shall never know. They have lost their opportunity. Necessity, which is the mother of pomology as well as of other invention, has been fully supplied out of other accessible, and in some cases, no doubt, originally better materials.

There are some, however, for which evidently "a good time is coming." Of these, our wild Grapes are foremost. They have such a start already, and seedlings, whether from crosses or otherwise, can be produced and selected and reproduced in so short a space of time, that they will probably have achieved their position when the American Pomological Society holds its centennial celebration.

Blackberries, from *Rubus villosus*, are in similar case; and if due attention be paid to the Low Blackberry or Dewberry, and to the Saud Blackberry of New Jersey and farther south, the foundation for a greater diversity of excellent sorts will be laid.

As to Cranberries, already an important staple, increase of size and abundance of production are all that are to be expected. It is easier to bring about improvements in the direction of sweetness than in that of acidity. Huckleberries, also, have probably nearly reached their perfection unassisted.

A few wild fruits may be mentioned which manifestly have great capabilities, that may or may not be developed in the future. The leading instances in my mind are the Persimmon and the Papaw—not the true Papaw, of course, which we have in Florida, but the *Asimina* or Western Papaw, so-called. Both Persimmons and Papaws are freely offering from spontaneous seedlings incipient choicer varieties to be selected from; both fruit when only a few years old, thereby accelerating the fixation of selected varieties into races; and both give fruits of types wholly distinct from any others we possess of temperate climates. He that has not tasted a Kaki has no conception of the capabilities of the *Diospyros* genus. The Custard Apples of the West Indies give some idea of what might be made of our Papaw when ameliorated by cultivation and close selection from several generations. I have understood that one of the veteran pomologists of the country, Dr. Kirtland, of Ohio, a good while ago initiated a course of experiments upon the Papaw, in this regard; it would be well to know with what success, and whether the breeding and selection have been continued through successive generations.

Our American Plums, already mentioned, have for many years been in some sort of cultivation, and have improved upon the wild forms; but I suppose they have not been systematically attended to. Their exterior liability to black-knot and other attacks renders them for the present unsuccessful.

Finally, if pomology includes nuts, there is a promising field uncultivated. Our wild Chestnuts are sweeter than those of the old world; it would be well to try whether races might not be developed with the nuts as large as Marrons or Spanish Chestnuts, and without diminution of flavour. If we were not too easily satisfied with a mere choice among spontaneous Hickory-nuts, we might have much better and thinner-shelled ones. Varying as they do excessively in the thickness of the shell and in the size and flavour of the kernel, they are inviting your attention, and promising to reward your care. The Pecan is waiting to have the bitter matter between the shell and the kernel bred out; the Butter-nuts and Black Walnuts to have their excess of oil turned into farinaceous and sugary matter, and their shells thinned and smoothed by continued good breeding; when they will much surpass the European Walnut.

All this requires time, almost unlimited time; but it is not for those who are enjoying the fruits which it has taken thousands of years to perfect, to refrain from the good work which is to increase the enjoyments of far future generations.—(*Horticulturist*.)

## DOINGS OF THE LAST AND PRESENT WEEK.

### KITCHEN GARDEN.

PRUNING *Gooseberry* and *Currant* bushes, also looking over fruit trees to thin-out branches where crowded. Digging and trenching kitchen-garden quarters. Where the division lines

consist of any description of fruit trees, the pruning should always be done before the ground is dug or trenched; it is also desirable to loosen the surface soil under the bushes or trees to the depth of 3 inches, and to throw it out into the middle of the quarter, and this for a twofold reason: First, the larvæ of insects are to be found in the surface soil, and if they are buried at the bottom of the trenches will be destroyed; and in the second place, the new soil which is taken from the open ground to replace that which has been removed will act as a stimulant to the trees. When Gooseberry bushes are infested with caterpillars, removing the old soil in this way any time during the winter and replacing it with fresh is an effectual remedy. The old soil ought always to be placed on the surface of ground which has to be trenched, as in digging much of the top soil is still left near the surface. In all operations of digging and trenching it is well to study neatness. The ground, if at all uneven, should be levelled, and the surrounding alleys which may contain weeds have the surface scraped off with a spade; and before digging out the trench a line should be tightly stretched along the side and the ground marked off; and on finishing the work a line should be again used and a neat edging made.

In gardens where there are plenty of frames, hand-lights, and other glass appliances, it is easy to obtain early crops of the smaller vegetables and salads, but where the glass is restricted, Early Horn Carrots, Radishes, and Paris White Cos Lettuce may be sown on sheltered borders facing south; the soil being dry and the weather fine, it may be done at once. For all small seeds that are sown early it is very desirable to place about 2 inches of fine dry soil over the surface and to sow the seeds in it. Where there is much potting done there will always be a supply of fine soil from the potting-shed. This ought not to be wheeled-out and wasted, as is sometimes done, but stored in a dry place, so that it may be always at hand to be used as indicated above. The early-sown Peas must be watched, as the long-tailed field mice are very partial to them, and will do much damage if not trapped by the usual methods.

### FRUIT AND FORCING HOUSES.

Our *Vines* in the early houses are slow in breaking this year. The borders have been well supplied with tepid water, that on the outside being protected with wooden shutters as well as fermenting material underneath the shutters. The heat, whether the covering is composed of stable manure or a mixture of that and leaves, declines in four or five weeks, when it may be removed by turning the heap over and mixing some fresh material with it. Advantage should be taken of this to water the border, the water to be of a temperature of 85° or 90°. Cold water may be taken from a river or pond if rain water is not to be had, and raised to the required temperature by adding hot water from a copper as the watering proceeds. Water should not be allowed to stand in the copper and be used afterwards; such water is occasionally injurious to the roots of plants.

We have not yet cut the Grapes in the late vineries, but for the last three or four years all the bunches were cut between Christmas and New Year's-day, the stalks inserted in bottles of water, which were hung-up in an airy fruit-room. Lady Downe's, Gros Guillaume, and Muscat of Alexandria will be all the sorts that remain for this purpose. This year Royal Vineyard and Mrs. Pince's Black Muscat are quite spoiled with mould. The season which has just passed has been a bad one for keeping Grapes; and fuel being so dear, the heating apparatus was not used when it ought to have been—at the time the Grapes were colouring, so that the fruit is not well ripened. The more sugar the fruit contains the firmer will be the flesh, and the better will the fruit keep.

Successive batches of Strawberry plants in pots are making healthy progress; the earliest (Black Prince) are setting their fruit in a dryish atmosphere and a night temperature of from 60° to 65°. The pots are on a shelf very near the hot-water pipes, and at this stage of their growth none of the plants must be allowed to suffer from want of water. Many growers recommend saucers of water under the pots. We tried this once, and will not do so again, the result not being satisfactory. About four years ago, finding the hot-water pipes under the pots acted upon them injuriously, and those pots at the hottest end suffered most, boards were laid over the pipes to prevent the heat from ascending directly to the pots; this was a great improvement to the health of the plants.

Clumps of Mint and Tarragon should be potted-up and placed in any of the forcing houses. The early Potatoes, spread out thinly in a dry loft, have sprouted nearly an inch. Those who force their first crop in frames or pits should have their plants set out; if not yet done, no time should be lost. We prefer heated pits to frames for them; but if pits are not available, a bed of leaves and manure should be raised, with 6 inches of loam on the top, and the sets must not be put in until the bottom heat declines to 85° or 90°. When pits are used for this crop with artificial heat from hot-water pipes, the plants should be near the glass, and air should be freely admitted when the plants are above ground; they are also liable to the attacks of the aphid tribe, which should be destroyed by fumigation.

## PLANT STOVE AND CONSERVATORY.

The plan we pursue with the plants in our stove at this season may commend itself to others who grow mixed collections of plants in the same house. There are many species of plants which thrive best in a moderately moist atmosphere with a minimum temperature of 65°—such subjects as *Nepenthes*; some of the Palms, as the noble *Phœnicophorium sechellarum*; and *Orchids*, as *Phalenopsis*. All hardwooded plants that are expected to flower freely during the ensuing spring and summer months should not be wintered in this house. Many species of *Orchids* require a lower temperature and drier atmosphere to insure freedom of flower and robust health, such as *Vanda tricolor*, *V. suavis*, *V. insignis*, *Aërides odoratum*, *affine*, *Fieldingii*, and many other species, East Indian *Dendrobies*, &c. Our plants are removed to the Pine house, where the Pines are at rest.

A succession of flowers can be obtained by removing *Gardenias*, *Clerodendrons*, *Allamandas*, &c., from such a house as this to the stove, at intervals of two weeks. We do not approve of potting any plants during the winter months, but it is sometimes necessary. Some choice new *Ferns* were growing freely, and the pots had become matted with roots, these were potted, and *Dendrobium chrysotis* commencing to grow was also fresh-basketed. Plants of this *Orchid*, though not imported much more than twelve months, have made growths nearly a yard in length. *Thrips* persist in attacking the *Orchids*. *Cypripedium Veitchii* is their favourite feeding ground. Many splendid specimens have been disfigured by this pest. We fumigate periodically during the winter months, first removing tender *Ferns* and *Orchids* from the house. Every plant known to be infested with bug or scale has been overhauled and thoroughly cleansed with a sponge and tepid water in which soft soap has been dissolved. We are rather short of flowers in the conservatory. Roman *Hyacinths* are nearly over, but *Tulips*, *Hyacinths*, and other Dutch bulbs are coming in.

A few plants of *Azalea indica* have been placed in the forcing house, also *Deutzia gracilis*, *Spiræas*, *Lily of the Valley*, &c. A batch of *Roses* in pots, which were recently pruned, were placed in an early vinery at rest. The house has been started; the *Roses* and a batch of dessert Orange trees, with *Figs* in pots, will remain. The temperature commencing with a minimum of 50° is suitable for all; the plants are syringed daily with water which has been over the hot-water pipes for twelve hours previously. *Roses* in pots are subject to two pests, which must be watched for and checked on their very first appearance; they are the bud worm and green fly. The first must be picked out of the centre of the young shoots with a needle or pin, the fly must be destroyed by fumigating with tobacco smoke. Many varieties of *Roses* throw three times as many shoots as should be allowed to remain; these ought to be thinned-out when the growths are about 3 inches in length, a little judgment being required, so that a well-shaped plant may be produced. Removed all the late-flowering *Hyacinths*, *Tulips*, and *Polyanthus Narcissus* to the cold pit from the plunging material out of doors; many of them have made growths an inch in length. As soon as the plants were taken out a small pot was inverted over the crowns, as the sudden exposure to light and air is disastrous to the plants.

If possible, all the *Chrysanthemum* cuttings will be put in this week; those intended to form specimen plants were potted late in November, but a lengthened experience has proved to us that such early cuttings frequently run to flower in April. When this happens it is well to fall back upon the cuttings struck in January. The pots in which are the cuttings are placed for a week or ten days in a cold frame, when they are removed to a very gentle hotbed. It has been necessary to dip all the cuttings in an insect-destroying compound to kill the aphids before potting them.

## FLOWER GARDEN.

We continue to pot-off Zonal *Pelargoniums* as opportunity offers. Spring-struck cuttings of *Verbenas*, *Ageratums*, and a few other bedding plants are preferable to those struck in autumn. Batches of all such will be put in at once, and struck in bottom heat in the early Cucumber and Melon houses; it is too early yet to place them in hotbeds.—J. DOUGLAS.

## TRADE CATALOGUES RECEIVED.

Sutton & Sons, Reading.—*Suttons' Spring Catalogue and Amateur's Guide for 1874*.

B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London, N.—*Descriptive Catalogue of Flower Vegetable, and Agricultural Seeds, 1874*.

J. C. Wheeler & Son, Gloucester, and 59, Mark Lane, London, E.C.—*"Little Book," or Select Seed List, 1874*.

J. Blackley, Leyton, London, E.—*Catalogue of Tree and Climbing Carnations, &c.*

Robert Parker, Exotic Nursery, Tooting, Surrey.—*Catalogue of Agricultural, Flower, and Vegetable Seeds, &c.*

Pine-Apple Nursery Company, Maida Vale, Edgware Road,

London, W.—*Catalogue of Kitchen Garden, Farm, and Flower, Seeds, &c.*

## TO CORRESPONDENTS.

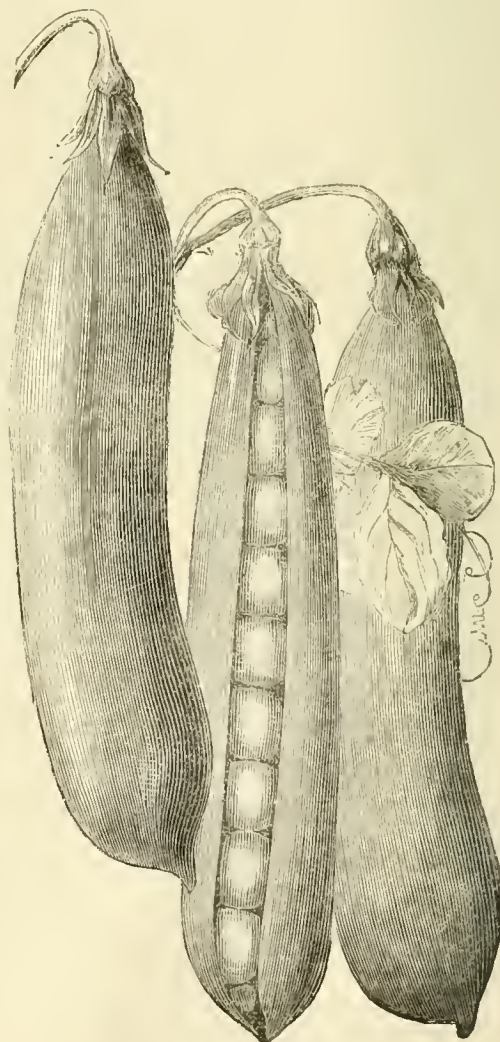
\* \* We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

*RUBUS ARCTICUS* (F. R.).—Never having tasted its berries we can give no opinion relative to their excellence. Erman, in his travels in Siberia, met with them at Bagoslovsk, in Siberia. He says that it was first discovered in that district, and that the flavour of the berries is superior to that of the Strawberry, and little inferior to that of the Pine Apple.

*JAMES'S PROLIFIC MARROW PEA* (J., Suffolk).—The best answer to your query is the following, which Dr. Roden said in this Journal last August:—"James's Prolific is a very handsome white wrinkled variety, about 3 feet high, with five large pods of a light green colour, containing from six to nine



James's Prolific Marrow Pea.

large peas of the finest flavour. This is a grand Pea, and ripens-off its crop pretty much at one time, so that the ground can be at once cleared for some other occupant. I am so much pleased with this Pea that I intend to adopt

it for my principal mid-season crop, sowing it at proper intervals for rapid succession." The accompanying woodcut has been sent to us by Messrs. Carter & Co., who introduced the variety.

**POTATOES FOR LIGHT SOIL (E. F.).**—You must have grown inferior varieties to have all "more or less watery." If you cultivate those which we recommended at p. 493 of last volume, you will succeed better.

**WATSON'S LAWN SAND (J. K.).**—We have not used it, therefore cannot give any evidence.

**TENANT'S TREES, TOOL HOUSE, &c. (Aconitum).**—Your predecessor had no right to remove them unless by special agreement with the landlord. Whatever you plant or erect without such an agreement will become the landlord's property.

**EXCLUDING TAME RABBITS (T. H. S.).**—A fence of galvanized wire a foot high, inclined outwards, would probably exclude them from the flower bed.

**LIST OF FRUIT TREES (A Novice).**—To give the list and the particulars you require would fill a column. Enclose five postage stamps with your address, and order "Fruit-growing for the Many." You will receive it free by post, and it contains all you ask for.

**VIOLETS OUT OF DOORS AND IN COLD GREENHOUSE (F. E. S.).**—Violets out-doors only require to have the soil enriched with some thoroughly rotten manure or leaf soil, choosing a moderately light rather than a stiff and heavy soil, it being well worked and exposed to the weather the winter before planting, which should be done in April, or early in May, in moist weather, putting in rooted runners or suckers in rows a foot apart, and that distance apart in the rows. For the convenience of attending to the plants every fifth row may be left out, which will leave an alley between every four rows of plants. The plants should be well watered at planting, and afterwards during dry weather. The ground should be frequently stirred about the plants with a hoe, the beds kept clear of weeds and the plants of runners, and in autumn they should have mulching between the rows of partially-decayed leaves or other material, taking care not to cover-up any flower buds. The mulching should not exceed an inch in thickness. The best position is an east or other border shaded from the hot midday sun. For pots, we think them best potted in September, taking-up the plants with nice balls, and potting in 6-inch or 7-inch pots, in fibrous loam two parts, and a third of leaf soil, or three parts loam to one of thoroughly decomposed manure. Place them in a cold frame, and shade from bright sun for a few days, and then remove to a light airy position in the greenhouse, taking off decayed leaves as they occur, and keeping duly supplied with water, but avoid making the soil sodden by frequent needless waterings; better dryness than this, especially in moist weather.

**PLANTING PAMPAS GRASS (Idem).**—Keep the plants in the pots in the greenhouse, and if a cold one all the better, the pots being protected by a little hay placed over them, if the weather is so severe as to freeze the soil in the pots. Plant-out in April, making the ground rich and loose by digging, and working-in some well-rotten manure, leaf soil, or other rich compost, and if heavy add sand or old mortar rubbish so as to lighten it. Water well at planting, and in summer if dry weather prevail.

**COPING FOR FRUIT WALL (D.).**—The coping, if you intend it for protection to the blossom, should project 2 feet from the wall. It is best of glass, or wood sashes glazed, supported by iron brackets, the sashes being about 6 feet long. The drip is injurious, and troughs or gutters should receive the water and convey it clear off to one or both ends. The best angle is probably 45°. We have an idea of somewhere seeing the sort of thing you want, and it was called "Portable Fruit-tree Crymboethus," but manufacturers should advertise.

**RAISING BEET, CINERARIA MARITIMA, AND PYRETHRUM GOLDEN FEATHER (Richard).**—Bed Beet for flower-garden decoration should be sown early in April, rather thinly in pans or boxes, or in a warm position out-doors, placing the plants, if in pans, in a very gentle heat, keeping near the glass, and hardening well off. *Cineraria maritima* seed should be sown in March in a gentle hot-bed, and when the seedlings are large enough to handle they should be pricked-out an inch apart in boxes, and be returned under glass and kept growing for a time, hardening well off before planting-out. The cuttings should be put-in in gentle heat in March. They are vastly superior in colour to plants raised from seed. *Pyrethrum Golden Feather* seed should also be sown early in March in gentle heat, the pans kept near the glass, and when large enough to handle the seedlings should be pricked-off in boxes about an inch apart, returned to heat, kept near the glass, and be gradually hardened-off. It will be necessary to shade, keeping rather close and moist for a few days after pricking-out until established, then admit air freely.

**MANAGEMENT OF VINERY (C. Percival).**—You may start your vinery with a minimum of 55° in February. It is not "absolutely necessary" to raise the temperature 5° when the shoots have grown a few inches. A temperature 5° or 10° higher will be necessary when the Grapes are in flower. The best surface dressing is composed of equal parts loam and rotted manure, a 6-inch potful of finely-ground bones being added to each barrowful.

**BUSH PEAR TREES FOR YORKSHIRE (A Yorkshireman).**—Doyenné d'Été, Jargonelle, Williams's Bon Chretien, Beurré d'Amanlis, Thompson's, and Knight's Monarch.

**EUCALYPTUS GLOBULUS (Inquirer, Kenilworth).**—Write to Messrs. Veitch, of Chelsea, Messrs. Rolison, of Tooting, or to any of the principal seedsmen.

**HEATING BY GAS (Uninitiated).**—We shall in an early number describe fully the mode of heating greenhouses with hot water, gas being employed as fuel.

**PEACH TREES CASTING THEIR BUDS (A Constant Reader).**—The most likely cause of the buds falling is the imperfect ripening or perfecting of the buds, it being probably retarded by the "good crop" borne last season; and the roots being in a light gravelly soil, it is likely the trees may have suffered from want of water during the growing season. The falling of the buds is frequently a consequence of keeping the trees too dry at the roots when the fruit is ripening and the growth perfecting, also too dry when at rest. It arises from an imperfect formation of the buds and inactive state of the roots, which may be brought about by too dry a soil or atmosphere and attacks of red spider; but the chief cause is the wood not being thoroughly ripened.

**BOUVARDIAS FOR GREENHOUSE (Cambridge).**—The *Bouvardias* are grown out-doors in summer, as you would see the treatment of them for that purpose at page 4 of our last week's number, also as window plants; and the reason you are surprised that in the same number the words occur "*Bouvardias* of sorts require a cool stove," from your not being aware that the latter refers to plants grown especially for winter flowering, which to bloom freely at that season require a temperature of 50° to 55° from fire heat, or a warm green-

house or cool stove. We have *B. elegans* now in flower in a greenhouse from which frost is only excluded, but the flowers do not open nearly so well as those in a warmer house. The kinds suitable for a greenhouse are *B. elegans*, *B. floribunda*, *B. Hogarth*, *B. splendens*, *B. Vreelandii*, *B. longiflora*, and *B. Davissoni*. A few greenhouse flowering plants are—*Acacia armata*, *A. longiflora magnifica*, *A. oleifolia elegans*, *Azaleas* of sorts, *Chorozema cordatum splendens*, *Coronilla glauca variegata*, *Correa Brilliant*, *Cytisus racemosus*, *Camellias* of sorts, *Diosma capitata*, *Eriostemon baxifolius*, *Geucyllum fuchsoides*, *Eutaxia floribunda*, *Hibiscus Readii*, *Hydrangea japonica*, *Indigofera decora*, *Kalosanthes coccinea superba*, *Libonia floribunda*, *Nerium rubrum plenum*, *Polygala Dalmatensis*, *Valletta purpurea*, and *Witsenia corymbosa*. In our manual, "The Greenhouse," you will find a full list of greenhouse plants with their treatment. It may be had by post from our office for 10d.

**COTONEASTER SIMMONDSII SOWING (Scybor).**—The seeds should be sown in the open ground in light moderately rich soil in March, keeping them in the meantime in layers in sand; cover them three-quarters of an inch deep with fine soil. Some may come up in the first, but the majority not until the second season. It is not, that we are aware, readily raised from cuttings, but layers root freely; they may be made from now up to March. Seedling plants, from their better growth, would be preferable for a divisional hedge in gardens. *Berberis Darwinii* makes a very beautiful hedge or screen of about 4 feet high. It seeds or berries freely with us, but the birds take all of them unless the bushes are netted. Both it and *B. Aquifolium*, especially the latter, come up freely with us from self or bird-sown seeds. Plants of *Cotoneaster Simmondsii* and *Berberis Darwinii*, 9 inches to 12 inches high, may be had at a cheaper rate per hundred. We do not know where the seed may be obtained.

**INSECTS (C. R. H.).**—The insects on the leaves of your Clematis in the conservatory are females of a species of scale insect, which must be got rid of by careful examination and crushing, or your plants will soon be infested with vast numbers of young. (*L. J. K.*)—The minute black objects on the small twigs of your Apple trees are the eggs of a small black bark mite. It would be well to wash the twigs with a stiff mixture of lime and soap-suds.—*I. O. W.*

**NAMES OF FRUITS (J. Woodliffe).**—The Apple sent you as the Gravenstein by the nurseryman you name has no resemblance whatever to that variety. Apple No. 2 is a local Lincolnshire variety, and known by no other name than "Old Man." The Pear is *Gloir Morceau*. (*Portland*)—Apples quite smashed; came in a bag, the label bearing the postmark of the above-named Irish town. Fruit should be sent in a box.

**NAMES OF PLANTS (J. W.).**—*Ruscus aculeatus*, or Butcher's Broom. So called popularly because butchers used it to crush flies from their meat. (*H. G., Chatham*).—Apparently *Pimpinella Saxifraga* var. *dissecta*, but it is never safe to name Umbelliferæ without fruit. (*Mac*).—1, *Lycopodium alpinum*; 2, *Polystichum aculeatum*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### PROFIT OF POULTRY-KEEPING.

I WILL give my short experience. I may say we have a good run, except that I had to keep my whole stock penned-up for two months in the middle of the season, which I consider was a loss of about £2. I had stock to buy, which has cost me £4; food and eggs for sitting have cost £7. My receipts have been—eggs, £6 15s.; fowls and Ducks, £2 10s. Manure I put as a set-off against labour. My stock now consists of one Spanish cock and thirteen hens of last year (1873), various breeds, and twelve hens of 1872, seven Ducks, and one drake. We are now getting about four eggs per day from *Cochin* and *Brahma* pullets, which we are selling at 2d. each, so that I am disposed to think that, judiciously managed, it is anything but a losing game, as I have had all sorts of bad luck, losses of chickens by rats, &c. My advice would be, Do not set a hen on more than nine eggs, do not begin to set before March nor set any after April. I will now conclude, wishing you and your many readers a very happy new year.—SPANISH COCK.

### HENS AND CHICKENS MURDERED.

In the autumn of last year I was under medical advice, taking Homburg "Elisabethan" water, imported by Messrs. Best, Henrietta Street, Cavendish Square. It was in large bottles, packed in a hamper with some of the foreign hay in which, I understand on inquiry, Messrs. Best usually receive it from Homburg. No bottle was broken; and a few days after the hamper had been unpacked, and the bottles put away—the hamper with the hay remaining in a down-stairs passage—my cook took some of the hay to put, at their bed-time, in the sleeping-place of a healthy Silky hen with a fine brood of healthy chickens just feathered. When she went to attend to them in the morning mother and chicks were all dead. Thinking this an unaccountable fatality, and not connecting it with the use of the foreign hay which, though coarse, was sweet and dry, some more of the hay out of the hamper was used in the same way, a few days later, for a Game Bantam hen in perfect health, with a healthy brood some three weeks old or more, when the same fatality occurred, mother and chicks (the latter Silkies and White Game Bantams) being found dead in the morning. The hay in the sleeping-place and hamper was then, on the impulse of the moment, destroyed, but on mentioning the facts some weeks later Messrs. Best furnished a sample of the Homburg packing hay which I enclose.—E. J. N. H.

[We have given the hay the closest investigation we can with-



never been seen before. In classes where there were upwards of fifteen entries two extra prizes were very considerably allowed by the Committee, and each of these classes came in for its share of these extras. Shortfaces had thirty-three entries, some birds being of fair quality, but the majority not near the standard for that variety. The first Silver Dun, and second Blue Chequers, were fair specimens. Longfaces (cocks) were a grand display, eclipsing their Shortfaced brethren in a great degree, the birds generally being so true to colour and marking as to partake much of the ornamental appearance of the more fancy varieties; and after naming the first and second-prize winners, the first of which was Blue and the second Silver Dun, it would be difficult to particularise. The first in this also won the cup for Antwerps, and he was perhaps one of the most perfect birds ever seen, combining the sharp-cut outlines of the Carrier with the quick intelligent head of the Antwerp, and as true to colour as is possible. The second was close on the heels of the first, a clear Silver Dun with a jet-black beak; the third being a Red Chequer. In hens the first was a Red Chequer, perhaps the most perfect in head properties of any hen going, the only fault being a slight redness on the cere of the eye; the second a Dark Red Chequer, and the third a Blue Chequer. As regards the head properties the medium-faced birds were a very even lot, the style, carriage, colour, and chest-development alone determining their positions. The first was a Red Chequer, second Blue Chequer and a Dark Blue Chequer. Carriers were very poor with the exception of the winners. The first a grand young Black cock, as also the second, the third being a neat Dun hen, but very young. Dragons very good, and the winners Blue, and all cocks. In Turbits a veteran Blue cock was first, a Yellow second, and a young Red hen third. Tumblers, Longfaces, were one of the best classes, and the first prize went to a good-coloured Red Mottle, second to a Blue Bald, and third to a Black. Barbs were very good, the first being a well-made-up Dun hen, second and third Black and Red cocks of great promise, although quite young. The Variety class was a puzzle in which it was difficult to feel satisfied that justice had been done, so many of the standard varieties competing. The first prize was awarded to a Blue Pouter cock, second to an Almond, and third to a Fantail, while the extras went to a Nun, a Magpie, a White Pouter, and a Trumpeter. In the Selling class Silver Owls, Antwerps, and White Pouters won.

The amount received in entrance fees for Pigeons was considerably over the outlay in prizes, which argues well for the estimation in which the Society is held, and it is to be regretted there is not a room in the village sufficiently large for a show on a more elaborate scale.

The room for the *Canaries* was far too small, as half the cages had to be placed too high up for a proper inspection of the birds, visitors being generally prohibited from removing a cage from the stage. The entries numbered 181, which would doubtless have been considerably increased but for the counter-attractions of Barton-on-Humber, Manchester, Hexham, Dewsbury, and South Shields. It is to be regretted that some "clashing" had not been timely avoided.

Belgians were first on the list, and with the exception of the winning Yellows were of the "stiff" variety, and lacked that elasticity which always accompanies high-class birds. They were, too, so persistently restless as to render judging a difficult task. Steadiness is always desirable in any cage bird, but in Belgians it is indispensable, and we would strongly urge fanciers to bear this in mind.

The Clear Norwich were of the new gaudy colour, all six prizes going to the celebrated Derby firm.

In the Evenly-marked Norwich class Yellows and Bufts competed together, the first prize falling to a Buff—the best "all-property" Norwich in the Show, and the second and third to Yellows.

One class for Ticked or Unevenly-marked Norwich brought together some fine specimens, the first a Ticked Buff, most rich in colour, but rather "washed" in the neck; the second a rather heavily-marked Buff, not so high in colour, but a perfect model of a Norwich Canary, and rarely is such a bird seen; the third was a good Yellow.

Crested Norwich were good; first was a Buff hen, soft in feather and low in colour, but with a magnificent dark crest; second a high-coloured Yellow cock, and the third a large-crested Buff cock. This class (S. Tomes, No. 4) contained a grand stock bird.

Coppies, Yellow, were well shown; first a fine Clear cock, second a full grey-crested hen, and third a cock.

Coppies, Buff, were fine birds, but, as a class, scarcely equal to the Yellows. The winning Lizards were good in colour, but rather small, and too narrowly built, especially the Golden birds.

The Clear Yorkshires were very fine, but it should be remembered these birds have most distinctive characteristics, and are neither good-feathered "Cuppy Plainheads" (as they are termed), nor yet Elongated Norwich.

The Evenly-marked Yorkshires were the great feature of the

Show. They were really splendid birds, the winners in each class being literally perfect in their markings; every bird was worthy of a prize. The winning birds were clear.

Cinnamons had been all moulted under the new régime. The first and second honours in Variegated Cinnamons were taken by beautifully marked Yorkshires, and the third by an evenly but rather heavily marked high-coloured bird, an old warrior, and evidently much distressed by his battles.

The cages of six were well selected, and almost on a par.

The Selling class contained some good and cheap birds. First was a large Silver Lizard cock (should have been in his own class); second a Ticked Yellow Belgian hen; and third, a useful Crested Norwich cock.

Goldfinch Mule, Clear or Variegated. First, a well marked Jonque, full of quality, and will still improve; second, an evenly-marked but rather grizzily-flighted Mealy, apparently much jaded by laurel-winning; and third, a slightly but unevenly marked Jonque, perfect in shape, but short of finish. The illogical "nearest the Canary" theory, would, of course, have placed this bird first. Goldfinch Mule, Dark, one entry, a fine Jonque bird.

There was nothing extraordinary among the Linnets Mules, although it is a difficult matter to breed a bird as good as the first, or so large as the third. In Any other variety of Mule the prize went to a beautiful Bullfinch and Goldfinch, showing well the colour of each bird, especially the "flourish" of the latter. The winning Goldfinches, Bullfinches, and Linnets were good, especially the first-prize Bullfinch, which was a beauty.

A splendid Starling, a remarkably tame and well-shown Missel Thrush, and a handsome Brambling took the prizes in the Variety class in the order named. There was also a pair of Snow Buntings, rarely seen at an exhibition. They are birds of soft, delicate, but unpretending plumage, and on this account scarcely eligible for successful competition in a miscellaneous class.

#### PIGEONS.

OWLS.—English.—1, S. E. Seanoor, Leeds. 2, J. Rhodes, Horton, Bradford. 3, Ward & Rhodes, Otley. *vhc*, G. E. Sawdon, Sutton, Cross Hills; Ward & Rhodes. *hc*, W. Ridge, Bradford; W. Hardcastle, Bingley; E. Rhodes.

ANTWERPS.—Short-faced.—1, J. Gardner, Preston. Extra 2, J. Hutton, Idle. 3, W. Ellis, Idle. Extras 3, F. Joy, Walmgate, York. *vhc*, W. Hardcastle, Bingley; J. Gardner. *hc*, J. Bishop, Skipton; E. Davey, Baildon; W. Ellis; F. Joy; R. Sharp, Lower Baildon. *c*, J. Hutton, Baildon.

ANTWERPS.—Long-faced.—Cock.—Medal and 1, W. Lund, Shipley. 2, H. Jennings, Alerton, Bradford. Extra 2, E. Monsey, Low Moor. 3, W. Ellis; H. Mitchell, Bingley. *vhc*, P. Jowett, Eldwick, Bingley; T. Slater, Bingley; A. Johnson, Bradford; H. Jennings; J. Sparrow & Co., London (2). *hc*, W. Ellis (2); J. Hutton, Idle; G. Margatroyd, Baildon; D. Davey, Baildon; J. Mann, Baildon; B. Webster, Baildon; G. Watson, Baildon; C. S. Hutton, Baildon. Hen.—1, H. Jennings. 2, W. Ellis. 3, Burston & Clayton, Gillingham, Bradford. *vhc*, J. Bishop, Skipton; J. Wood, Alerton; E. Monsey. *hc*, W. Ellis; T. Cordingley, Bradford; A. Johnson, Bradford; H. Jennings; J. Pearce, Burton-on-Trent. *c*, H. Ingle.

ANTWERPS.—Medium-faced.—1, W. Lund. 2, H. Jennings. Extra 2, W. Ellis. 3, J. Foster, Denholme, Bingley. Extras 3, J. Robinson, Baildon. *vhc*, W. Copley, Baildon; W. Ellis; H. Mitchell; H. Jennings. *hc*, W. Ellis; Burston and Clayton; H. Mitchell (2). *c*, W. Hingworth, Alerton.

CARAIERS.—1, J. Hawley, Gillingham, Bradford. 2, S. E. Seanoor, Leeds. 3, J. Rallin, Eccleshill. *hc*, D. Riddiough, jun., Bradford; J. Pearce, Barton-on-Trent. *c*, D. Riddiough; J. E. Masoo, Shipley; J. Hawley.

DRAGONS.—1, Burston & Clayton. 2, G. W. Dutton, Chester. 3, G. E. Sawdon. *vhc*, W. Lund; H. Jennings. *hc*, H. Ingle (2); F. Joy, H. Jennings; W. & Rhodes, Otley. *c*, J. Brearley, Woodland, Windhill; Burston & Clayton.

TURBITS.—1, 2 and 3, H. E. Poole. 2, W. Lund. *vhc*, H. Jennings. *hc*, J. Pearce; H. Mitchell; J. E. Mason; J. Hawley.

TUMBLERS.—Long-faced.—1, 2 and *vhc*, D. Riddiough, jun. 3, W. Walker, Baildon. *hc*, D. Riddiough, jun.; A. & J. Wells, Ripon (2). *c*, J. S. Robinson, Baildon.

BARBS.—2 and 3, J. Thresh, Bradford. *vhc*, S. E. Seanoor (2). *hc*, D. Riddiough, jun.; H. Jennings (2). *c*, G. E. Sawdon.

LOVERSILGE.—1, J. Hawley. Extra 2, S. E. Seanoor. 3, J. F. Loversilge, Newark. Extra 3, D. Riddiough, jun. Extra 4, H. Mitchell; F. Joy. *vhc*, W. Lund; H. G. Poole; G. E. Sawdon; J. Thresh; S. E. Seanoor. *hc*, J. Pearce; G. E. Sawdon; J. Thresh; S. E. Seanoor. *c*, A. & J. Wells; J. F. Loversilge.

SELLING CLASS.—1, W. Ellis. 2, J. Lancaster. Extra 2 and extra 3, J. Hawley. 3, W. Ridge. *vhc*,—Posselt, Shipley. *hc*, W. Ellis; W. Lund; J. Miers, Baildon. *c*, D. Riddiough, jun.; Burston & Clayton;—Posselt.

#### CAGE BIRDS.

BELGIAN.—Clear Yellow or Ticked.—2, Anderton & Fawcett, Baildon. 3, R. Hawman, Middlesbrough. *c*, R. Smith, Cross-hills. Clear Buff or Ticked.—1, R. Hawman. 2, W. Shackleton, Idley. 3, J. Stark, Cross-hills. *hc*, W. and M. Boston, Leeds.

NORWICH.—Clear Jonque.—1, 2, and 3, Orme & Bemrose, Derby. *c*, Bexson and Lamplough. Clear Buff.—1, 2, and 3, Orme & Bemrose. *vhc*, Bexson and Lamplough.

NORWICH.—Even-marked Yellow or Buff.—1 and 2, Orme & Bemrose. 3, S. Tomes, Northampton. *vhc*, Bexson & Lamplough. Ticked or Unevenly-marked Yellow or Buff.—1, 3, and *vhc*, Orme & Bemrose. 2 and *hc*, Bexson & Lamplough. Crested Yellow or Buff.—1 and 2, Orme & Bemrose. 3, J. Devauy, Knaresborough. *hc*, S. Tomes; Bexson & Lamplough.

COPPY.—Yellow with Clear or Grey Crest.—1, 2, and *vhc*, W. Hutton, Baildon. Leeds. 3, W. Shackleton. *hc*, W. Hutton; D. Hingworth, Hertsford. Buff with Clear or Grey Crest.—1, Anderton & Fawcett, Baildon. 2, O. Paley, Baildon. 3, J. Potter, Bradford.

LIZARD.—Golden-spangled.—2 and 3, R. Ritchie, Darlington. *hc*, W. & M. Boston, Leeds. Silver-spangled.—2 and 3, R. Ritchie. *c*, S. Tomes; M. Holroyd, Bradford.

YORKSHIRE.—Clear Yellow.—1, W. Hutton. 2, W. Shackleton. 3, J. Cock-shott, Fearncliffe, Bingley. Clear Buff.—1, W. Hutton. 2 and 3, Anderton and Fawcett. Extra 3, O. Paley.

YORKSHIRE.—Even-marked Yellow.—2, L. Belk, Dewsbury. 3, J. Stevens, Middlesbrough. *vhc*, K. Havason, Darlington. Even-marked Buff.—1, L. Belk. 2 and 3, S. D. Cay, Gillingham, Bradford.

YORKSHIRE.—Ticked or Unevenly-marked Yellow.—1, J. Garbutt, Northallerton. 2, J. Lupton, Baildon. 3, W. Hutton. *hc*, S. Hainsworth, Farsley. Ticked or Unevenly-marked Buff.—1, J. Stevens. 2 and 3, G. Gott, Shipley.

CINNAMON.—Jonque.—2, Bexson & Lamplough. 3, Orme & Bemrose. *vhc*, Orme & Bemrose; Bexson & Lamplough. Buff.—1 and 2, Orme & Bemrose. 3, Bexson & Lamplough. Marked or Variegated.—1, L. Belk. 2, M. Holroyd. Orme & Bemrose. *vhc*, P. Rawnsley; Bexson & Lamplough (2).

CAGE OF SIX CANARIES FOR VARIETY OR PLUMAGE.—2, D. Cay. 2, W. Hutton. SELLING CLASS.—1, M. Holroyd. 2, Anderson & Fawcett. 3, S. Tames. *the*. P. Rawnsley. *he*, W. W. Garnett, Baildon; W. Hutton; Raistrick and Arderton. GOLDENFINCH MULE.—*Clear or Variegated*—1 and *the*, W. Hutton. 2, J. Stevens. 3, J. Brown, jun, Penrith. *he*, T. Pemberton, Baildon. *Dark*—2, W. Hutton. LINNET AND CANARY MULE.—1, 2, and 3, W. Hutton. MULE.—*Any other variety*.—2, F. Waterhouse, Windhill. GOLDFINCH.—1, J. Tennison, 2, W. Hutton, 3, P. Rawnsley. *the*, W. and M. Bolton. BULLFINCH.—2, J. Devany, Knareborough. 3, H. Garbutt, Northallerton. *the*, J. Fawcett, Baildon. LINNET.—*Brown*—1, J. Stevens. 2, F. Fawcett. 3, T. Pemberton, Baildon. ANY OTHER VARIETY.—1, J. Hall. 2, C. Holdsworth, Harrogate. 3, W. Hutton. JUDGES.—*Pigeons*: Mr. E. Hutton, Pudsey. *Cage Birds*: Mr. J. N. Harrison, Belper.

## PAISLEY ORNITHOLOGICAL SOCIETY'S SHOW.

THE twentieth annual Exhibition took place in the Drill Hall on the 1st and 2nd inst.; and, as in past years, was very successful both as regards the number of entries and of visitors. In the poultry department there were 371 pens, of Pigeons 129 entries.

SPANISH.—1, A. Robertson, Kilmarnock. 2, J. M'Murche, Castlehead, Paisley. 3, W. Wallace, Auchanbrann, Manchinie. 4, R. Taylor, Glasgow. *Chickens*.—1 and Special, R. Mitchell, Fowler, Manchinie. 2 and *c*, J. Wallace, Burnbank, Glasgow. 3, J. Bryce, Calderbank, Airdrie. 4, A. Walker, Kilmarnock. *Hens*.—1, J. Park, East Kilbride. 2, J. Bryce. 3, A. Walker, Titchfield. 4, A. Brown Neilson.

DORINGS.—*Coloured*.—1, 3, and Special, Mrs. A. Alston, Craighead, Hamilton. 2, J. Stevenson, Chapelhall, Airdrie. 2, T. Smellie, Moorhead, Kilmarnock. *Chickens*.—1 and Special, J. Robinson, Garstang. 2, Z. H. Heys, Barhead. 3, Mrs. A. Alston. 4, H. Bain, Dalmellington. *White*.—1, J. Mathieson, Dalmellington. 2, J. Pettigrew, Dalmellington. 3, R. Farrow, Dalmellington. 4, J. Stevenson. *he*, J. Robinson.

CHINESE.—1 and Special, J. Robinson. 2, J. Pollock, Bushby. 3 and *c*, P. Beith, Largs. 4, A. Russell, Cardross. BRAHMA POOTRAS.—1, Special, and 3, H. Wyse, Bishopbriggs. 2, J. Stewart, Helensburgh. 4, G. Willison, Kilmarnock.

OLD SCOTCH BREED.—1 and Special, J. Fulton, Beith. 2, W. Thomson, Glasgow. 3, T. Lawrie, Linlithgow. 4, R. Clark, Dalserf.

HAMBOURG.—*Golden-spangled*.—1 and Special, J. Crawford, Beith. 2, T. Bolton, Stockton-on-Tees. 3, D. Beaton, Bushby. 4, J. Moodie, Paisley. *he*, J. Moodie. 4, B. Rega, High Blantyre. *Hens*.—1, G. Black, Old Kilpatrick. 2, J. Crawford. 3, W. Forrest, Barhead. 4, T. Mackie. *Silver-spangled*.—1 and Special, A. Beith, Bathgate. 2, P. Crawford, Glenfield. 3, W. Hushand, Kilmarnock. 4, D. McIntosh, Ardock Braes. *he*, A. Yendell, Galston.

HAMBOURG.—*Golden-pencilled*.—1, M. Minnes, Paisley. 2 and 3, D. Gilmour, Kilmarnock. 4, J. Clark, Paisley. *he*, W. Neilson, Johnstone. *c*, J. Cochran, Strathaven. *Hens*.—1, T. Gillon, Kilmarnock. 2, W. Minnes, Paisley. 3, W. Linton, Selkirk. 4, T. Gilmour. *Silver-pencilled*.—1 and Special, T. Bolton.

2, J. M'Laren, Kilmarnock. 3, J. Webster, Colna. 4, R. Muir, Kilmarnock. *Hens*.—*Pair*.—1, J. M. Campbell, New Byth. 2, J. Anderson, Paisley. 3, G. Fullarton, Paisley. *Single*.—1, J. Dunn, Galston. 2, A. Wright, Bridge of Weir. 3 and 4, J. Lockhead, Kilbarchan.

POLANDS.—*Topped*.—1, J. Laird, Johnstone. 2, 3, and *he*, A. Wylie, Johnstone. 4, J. Robinson, Garatong.

GAME.—*Black-breasted*.—1 and Special, J. Houston, Galston. 2, T. Mackie. 3, J. Clark, Galston. 4, Z. H. Heys, Barhead. *he*, J. C. Sneddon, Liverpool; T. Taylor, Airdrie. *c*, J. S. Ferguson, Dalmuir; J. Marton; G. Williamson, Johnstone; J. Wallace. *Any other colour*.—1, J. Lapping, Barhead. 2, R. Andrew, Barhead. 3, J. Allison. 4, W. Nelson, Johnstone. *he*, W. M'Kay, Barhead. *Hens*.—1, J. Melville. 2, Z. H. Heys. 3, J. Williamson. 4, R. Irvine.

ANY OTHER VARIETY.—1, J. M. Wilson. 2, A. M'Lellan. 3, J. Lambie, New Canby. 4 and *he*, J. C. Shaw, Barhead.

CROSS-BREDS.—1 and 2, J. Pollock, Mearns. 3, J. Brown, Neilson. 4, A. Yendell. *he*, A. Dunlop, Paisley.

DUCKS.—*Aylesbury*.—1, 2, and Special, A. Robertson, Kilmarnock. 3, Z. H. Heys. 4, W. G. Keir, Dalry. *Any other variety*.—1 and 2, J. Pollock. 3, Mrs. A. Alston, Hamilton. 4, J. M'Donald, Glasgow. *he*, A. Robertson, Kilmarnock.

GAME BANTAMS.—1 and Special, H. Butler, Bradford. 2, J. R. Rennards, Helensburgh. 3, T. Barker, Hillend. 4, R. I. Kirkton. *he*, J. Mitchell, Perth. *c*, J. Spens, Paisley.

BANTAMS.—*Black*.—1, 3, and Special, D. M'Laren, Kilmarnock. 2, A. Mitchell, jun, Paisley. 4, J. Lochhead. *Any other variety*.—1, W. Montgomerie, Kilmarnock. 2, J. Wallace, Clarkston. 3, A. Robertson, Kilmarnock. 4, W. Weir, Beith. *he*, M. Henderson, Ardrossan.

SELLING CLASS.—1, R. Abercrombie, Castlehead. 2, J. Smith, Alexandria. 3, J. M'Laren, Kilmarnock. 4, R. Houston. *he*, J. Henderson, Glenfield; J. Mackstone, Johnstone; E. Black, Johnstone. *c*, J. Fulton, Beith.

### PIGEONS.

POUTERS.—*Blue*.—1, G. Wallace, Glasgow. 2, J. Mitchell, Glasgow. 3, J. Lahore, Larkhall. *Black or Red*.—1, G. Wallace. 2, J. Lahore. 3, J. Mitchell. *Any other colour*.—1 and Special, G. Wallace. 2 and 3, J. Mitchell. *he*, J. Forrest, Hamilton. *c*, J. Lahore.

TUMBLERS.—*Short-faced*.—1, 2, and Special, G. Wallace. 3, J. Lahore. *Any other variety*.—1 and 2, J. Glen, Camuslang. 3, W. M'Kinlay, Kilmarnock. *c*, J. Reid, Galston; J. Wallace, Airdrie.

CARRIERS.—1, G. Wallace. 2, W. Neilson, Johnstone. 3, M. Gilmour, Inchinnan.

FANTAILS.—1 and 2, J. Galt, Kilbirnie. 3, J. Caldwell, Johnstone. JACOBINS.—1, 2, and 3, J. Lahore. *he*, J. Lambie. 4, H. Imrie, Ayr; J. R. Rennards, Helensburgh.

NUNS.—1, A. Angus, Galston. 2 and 3, A. M. Imrie. TUMBLES.—1, J. Murray, Galston. 2, A. M'Kissack, Dalry. 3, C. Macgregor, Paisley. *he*, J. Calderwood, Paisley.

COMMON.—1 and Special, W. M'Kinlay, Kilmarnock. 2, A. Gray, Beith. 3, W. G. Kerr, Dalry. *he*, C. A. Minnes, Paisley.

ANY OTHER VARIETY.—1 and 3, G. Wallace. 2, J. Lahore. *he*, T. Findlay, Craigmack. *c*, J. Butler.

SELLING CLASS.—1, W. M'Leve, Ayr. 2, J. Glen. 3, J. Lahore. *he*, J. Somerville, Beith. *c*, W. G. Kerr.

### CANARIES.

CLIFAN.—1 and Special, J. Pringle, Glasgow. 2, J. White, Paisley. 3, G. Grant, Glasgow.

YELLOW.—*Cock*.—1 and Special, T. Scott, Carlnke. 2, J. Howie, Paisley. 3, W. Hunter, Kilbride. 4, W. Gibson, Beith. 5, R. H. Cochran, Kilbirnie. *Hen*.—1 and Special, D. Reid, Kilbirnie. 2, A. Borland, Galston. 3, P. Harrington, Beith. 4, W. White, Renfrew. 5, G. Grant.

BUFF.—*Cock*.—1, J. White, Paisley. 2, R. Ritchie, Reuton. 3, T. Jamieson, Kilbarchan. 4, M. Adam, Ayr. 5, W. Clark, Kilbarchan. *Hen*.—1, T. Scott. 2, W. Thom, Stevenson. 3, R. Crawford, Kilbirnie. 4, H. Davidson, Alnwick Lodge. 5, A. Kelly, Paisley.

PHEASANT.—1, T. Scott. 2, W. Thom. 3, R. Paterson, Howwood. PHEASANT.—*Yellow*.—*Cock*.—1 and Special, J. M'Hutcheon, Airdrie. 2, A.

Borland, Galston. 3, T. Scott. 4, W. M'Bride, Greenock. 5, J. Smith, Coatbridge. *Hen*.—1, J. M'Hutcheon. 2, T. Scott. 3, J. Dalziel, Paisley. 4, R. Turnbull, Glasgow. 5, R. Bryden, Lochmaben.

PHEASANT.—*Buff*.—*Cock*.—1, T. Scott. 2, J. Pattison, Elderslie. 3, W. Thom. 4, R. Crawford. 5, H. Peebles, Paisley. *Hen*.—1, H. Hoggan, Greenock. 2, T. Scott. 3, J. Stewart. 4, J. Lyle, Wishaw.

GOLDFINCH MULE.—1, A. A. Mauchan, Dumharton. 2, G. Gendie, Ayr. 3, D. M'Guire, Beith.

HOME OR FOREIGN.—1, J. M'Colloch, Dumharton. 2 and 3, J. M. Wilson, Kilmarnock.

JUDGES.—*Poultry*: Messrs Alex. Paterson, Airdrie; Robert Bruce, Bushby; Thomas Raines, Bridge Haugh, Stirling; John Sharp, Johnstone; John Jordin, Kilmarnock; J. Steven, M.D., Ardrossan; William F. Farquhar, Alexandria; Andrew Mitchell, Paisley. *Pigeons*: Mr. Joseph H. Frame, Overton, Carlnke. *Canaries, &c.*: Messrs. Thomas Buchanan, Glasgow; James Fulton, Beith; John Lyle, Wishaw; Andrew Mitchell, Paisley; Robert White, Paisley; William Weir, Paisley.

## DEVIZES POULTRY SHOW.

THIS took place on the 6th and 7th inst. The following is the prize list.

DORINGS.—*Coloured, except Silver-Gray*.—1 and Cup, H. Lingwood. 2, J. Watts. 3, A. Darby. *the*, E. Hooper. *he*, Mrs. Dunn. *c*, J. Gee. *Any other variety*.—1, A. Darby. 2, S. Salter. 3, T. Pope. *he*, Mrs. Hayne. COCHINA.—*Cinnamon and Buff*.—1 and Cup, W. H. Crabtree. 2, Mrs. Allsop. 3, W. Morris. *the*, J. K. Fowler. *Partridge*.—1, Cap. Coleridge. 2, W. H. Crabtree. 3, J. K. Fowler. *he*, T. J. Maulefield. *c*, Hon. Mrs. Sugden; G. Lias. *White*.—1 and 3, W. Whitworth, jun. 2, R. W. Beachey. *he*, C. Bloodworth. *c*, Mrs. A. Tindal; R. S. S. Woodgate.

BRAHMS.—*Dark*.—1 and Cup, W. H. Crabtree. 2, Horace Lingwood. 3, E. Ensor. *he*, J. Watts. *c*, J. Trinder; F. L. Turner; J. Evans; O. A. Beadon. *Light*.—1 and Cup, W. H. Crabtree. 2, H. M. Maynard. 3 and *he*, Mrs. A. Tindal. *the*, J. K. Fowler. *he*, Mrs. T. Turner; P. Haines; J. Mitchell; Mrs. F. Cheshire; M. Leno.

SPANISH.—1 and Cup, R. Newbitt. 2, A. Darby. 3, Mrs. Tonkin. *the*, Mrs. Allsop.

GAME.—*Black-breasted or other Reds*.—*Cocks*.—1 and Cup, S. Matthew. 2, C. H. Ames. 3, E. Bowly. *he*, W. Foster. *c*, W. H. Stagg (2); J. Forsyth. *Hens*.—1, Cup, and *he*, W. H. Stagg. 2, W. Foster. 3, S. Matthew. *c*, H. E. Martin.

GAME.—*Any other variety*.—*Cocks*.—1, S. Matthew. 2, E. Sonthwood. 3, Dr. K. Bullmore. *he*, F. Hardingham. *c*, E. Wynwood. *Hens*.—1, S. Matthew. 2, Mrs. A. Tindal. 3, Dr. K. Bullmore. *he*, Hon. and Rev. F. Dutton. *c*, J. T. Browne.

HAMBOURG.—*Gold or Silver-pencilled*.—1 and 2, H. Beldon. 3, R. Newbitt. *he*, H. Feast. *c*, W. Speakman. *Gold or Silver-spangled*.—1 and Cup, T. Walker. 2, T. H. Mathewa. 3, N. Barter. *he*, J. Davies; H. Beldon. *c*, H. Beldon. *Black*.—1, H. Beldon. 2, T. Walker. 3, J. P. Cass. *c*, G. G. Moule.

POLANDS.—1, H. Feast. 2, C. Bloodworth. 3, G. Lias. *the*, D. Mutton. *he*, J. Hinton; H. Beldon. *c*, Capt. Coleridge.

FRENCH.—*Houdans*.—1, W. Whitworth, jun. 2, W. Dring. 3, J. Long. *the*, R. B. Wood. *he*, H. Feast. *c*, Mrs. A. Tindal; H. F. Price; D. Lane. *Any other variety*.—1, W. Dring. 2, R. B. Wood. 3, Mrs. A. Tindal. *c*, Mrs. Hill.

MALAYS.—1 and 3, J. Hinton. 2, Rev. A. G. Brooke. *he*, Rev. G. Hodson. *ANY OTHER VARIETY*.—1, Mrs. Holmes. 2, W. L. Crofton. 3, S. R. Harris (Mingra). *he*, J. K. Fowler. 4, D. Lane (Black Cochins). *c*, J. Long (Plymouth Rock); O. E. Cresswell (White Guin Fowl).

GAME BANTAMS.—*Black-breasted and other Reds*.—1, E. Payne. 2, C. H. Ames. 3, W. Boucher. *he*, R. Newbitt. *c*, W. S. Marsh. *Any other variety*.—1, E. Payne. 2, A. Ashley. 3, M. Leno. *he*, Mrs. G. S. Sainsbury; R. Newbitt; C. E. Scamell.

BANTAMS.—*Gold or Silver-spangled*.—1, Rev. G. Hodson. 2, J. Mayo. 3, M. Leno. *Any other variety*.—1, T. E. Thirte. 2, E. S. S. Woodgate. 3, R. Greig. *he*, R. Wingfield.

DUCKS.—*Aylesbury*.—1 and Cup, J. Hedges. 2, J. Walker. 3, J. K. Fowler. *he*, R. B. Wood. *c*, J. Walker. 2, G. Hanks. 3, R. Gladstone. *he*, Rev. E. Handley; J. K. Fowler. *c*, G. M. Hulbert; C. B. Rowland. *E. Ponting*. *Black East Indian*.—1, Cup, and 2, G. S. Sainsbury. 3, J. J. Malden. *the*, J. W. Kelleway. *he*, W. H. Stagg; Mrs. Hayne; G. S. Sainsbury. *c*, G. S. Sainsbury. *Any other variety*.—1 and 2, M. Leno. 3, W. Boucher (Mandarins). *he*, J. Watts.

SELLING CLASS.—1, F. L. Turner. 2, Mrs. Williamson. 3, J. K. Fowler. *the*, Mrs. Dunn. *he*, Hon. Mrs. Sugden; C. H. Ames; M. H. Sturt; D. Lane. *c*, J. M. Rooke; Rev. H. F. Edgell; M. H. Sturt; J. Watts; C. Maggs.

### PIGEONS.

CARRIERS.—*Cocks*.—1 and 2, H. M. Maynard. *Hens*.—1 and 2, H. M. Maynard. POUTERS.—*Cocks*.—1, Mrs. Ladd. 2, Rev. W. C. Bullen. *Hens*.—1, Mrs. Ladd. TUMBLERS.—*Almond*.—1, W. R. Pratt. *Any other variety*.—1 and 2, E. Ollis. BARES.—1, H. M. Maynard. 2, H. Yardley.

FANTAILS.—1 and 2, H. M. Maynard. *he*, Miss J. Milward.

DOUGONS.—1, Rev. G. Hodson. 2, H. Yardley. *he*, S. Salter. *c*, W. Morris.

ANTWERPS.—1, C. F. Copeman. 2, H. Yardley.

JACOBINS.—1, O. E. Cresswell. 2, J. Thompson. *he*, H. M. Maynard; J. Thompson.

TUMBLERS.—1, F. Hodding. 2, S. Salter. *he*, C. A. Crater; S. Salter; O. E. Cresswell; F. Hodding.

NUNS.—1 and 3, Rev. A. G. Brooks.

OWLS.—1, E. W. Van Schen. RUNTS.—1 and 2, S. Salter.

ANY OTHER VARIETY.—1, J. G. Watkins.

SELLING CLASS.—1, H. M. Maynard. 2, Mrs. Ladd. *he*, W. P. Keall; W. Morris; L. Allen.

JUDGES.—*Poultry*: S. Burn, Esq., East Terrace, Whitley, Yorks. *Pigeons*: F. Esquilant, Esq., 4, Effra Road, Brixton, London.

## HEXHAM POULTRY SHOW.

THE Town Hall at Hexham is decidedly one of the best we have yet seen for the purposes of an ornithological exhibition, both as regards the space and light, the latter unobstructed and from the roof. The entries were very large, the pens beautifully arranged, the quality of the birds good, the whole affair well managed, and the visitors numerous and fashionable. But again the great mistake was sawdust in every pen, and on the least movement of the birds a cloud of sawdust rose on all sides, but on the first mention of this we were assured that sand would take its place in future years.





very queen of flowers he found decked out like the jay, "in borrowed plumage;" so very extensively, too, that he and a brother judge were helpless to disqualify; further on, amongst the lovers of the feathered tribes, that Canaries are now produced in bright colours like a fast print, "warranted to wash." The artificial colouring being an internal process, cannot of course be expected either to breed or moult true—produced, in short, to show and sell. To escape such disagreeables I took refuge as a last resort in our own especial corner. What there met my view but an article from the pen of your valued contributor Mr. Pettigrew on the art of supering, containing the humiliating confession that the much-vaunted supers of the late horticultural exhibition were simply after all artificial, of Manchester manufacture, produced by feeding.

The honey display at Manchester after a season the worst in the experience of most bee-keepers, at least with us in the north, caused a general feeling of distrust to get abroad that there was something mysterious about these productions; but to the present writer the name of Mr. Pettigrew, who projected and collected the necessary funds to carry out the praiseworthy idea was a sufficient guarantee that everything would be conducted fairly and aboveboard, the more so as in a proposed competitive test of various hives he suggested in the spring, bee-keepers were to be excluded from all interference with their colonies, so that there might not be practised any "clever trickery," as he termed it; and I remembered, too, his burst of honest indignation the other year at some Stewarton supers, which had found their way to his city, and in his opinion were got up by feeding with sugar syrup, while another contributor as stoutly maintained the aforesaid supers contained no more sugar than did his pen.

The inquiry naturally enough arises, Was the art of supering pursued at Manchester by feeding a fair and legitimate competition? Most of your readers will agree in thinking with me it was not, no doubt; although Mr. Pettigrew tells us some of the supers exhibited were got up with sugar syrup, and consequently excluded, he fed with pure honey, the surplus of his stocks driven the twenty-fourth day after swarming. In such a season as last this was clearly what had remained over of former seasons, and consequently was *not*, as the rule demanded, "the produce of 1873." Supposing the same mode to be adopted next season, the surplus would be more or less the left-over sugar syrup of the fall of 1873. I cannot agree with your correspondent that "any honey tainted by farina or other impurity" can be given to bees with impunity to store in supers. The grosser impurities will doubtless be left behind, but the taint will remain.

Mr. Pettigrew presupposes that when the "art" of artificially filling-up supers becomes generally known, the production as well as the demand must be materially enhanced. I am afraid the opposite of this will hold good. Honeycomb in supers has generally realised about double the price per pound of run honey, because the wealthier classes assumed in purchasing it in this form they procured at the enhanced price pure virgin honey in contradistinction to the impure stuff, possibly adulterated with brown sugar, which is too often palmed-off as run honey. But let it once go forth that supers are no longer the pure nectar of the flower of the current season's gleaming, but mere "works of art," dependent for their composition on the conscientiousness of the respective artists, and they will speedily become but fancy ornaments to decorate their dwellings or the honey ware-house.

The most reprehensible part of the exhibition was the unexplained artificial nature of the contents of the supers exhibited at Manchester. The crowds of spectators were permitted to examine and move away under the false impression that they were *bona-fide* productions, due to some particular hive and system superior to what they already possessed, and the extreme badness of the season caused the disparity to appear all the greater. Mr. Pettigrew excuses himself thus: "The International could not wait for a favourable honey year, hence I had to resort to artificial means to get my palaces filled." One beautifully sealed bar of fresh pure honeycomb would be of more value in the eyes of the straightforward honest bee-keeper than any so-styled crystal palace of the Manchester Exhibition. To the practical apiarian are such crystal palaces reckoned works of high art? I trow not. They could, if thought advisable, be produced easily of an enhanced size to the "Try to beat this" of Manchester manufacture; the whole thing involving merely the possession of a few swarms of bees and a cask of the cheapest foreign honey—according to Mr. Pettigrew it mattered not how much fermented, tainted, or filled with impurities, it would all be purified in the slinging process; but most people would suppose refined sugar the more wholesome of the two.

To illustrate that such manufacturing is not altogether a new Manchester idea, I chanced some years ago to make the acquaintance of a town resident who knew absolutely nothing about bee-keeping. He had a friend, however, to whom he was indebted for some very beautiful glasses of honeycomb. The season I first met him his friend had secured not one but many palaces of various sizes; a couple ran to about Manchester weight.

From the description of his situation—the centre of a wide heath district, and knowing something of the results obtainable by combining prime swarms, I never for a moment dreamed but that all were genuine. My acquaintance told me he was going to take a run through to visit the bee-master, and promised to bring some particulars on his return of points of manipulation respecting which I wished for information. He was as good as his word, giving a graphic description of the enthusiasm of his friend upon bees, how he intended getting-up a glass for presentation to Her Majesty of a size that the largest I had seen would be nothing to, how he could easily fill a glass case as large in size as the railway carriage in which they were then travelling, how it would be a good thing to bring out one glass flavoured with citron, another lemon, &c. I brought him up rather abruptly, telling him I feared his bee friend was but a manufacturer, and dropped the acquaintanceship, at the same time pitying the one who had invested a considerable sum in the purchase of the largest palace.

The best proof that the Ayrshire bee-keepers are not, as a body, guilty of palming-off sugar syrup for flower honey, as insinuated by Mr. Pettigrew, is their accustomed octagons are nowhere to be seen the present season, when the price and the scarcity would make the temptation all the greater. Their glass merchants are not like the International, they are forced to "wait for a favourable honey year." The following colloquy passed between, I believe, the largest bee-keeper in Ayrshire and his merchant. On making his appearance the first question asked was, "What has become of your honey?" His reply, "My bees have gathered no flower honey this season, I have none to bring, and cannot make it."

At every exhibition, of whatever description, there ought always to be a lynx-eyed committee of investigation, who would go round disqualifying, if need were, before the judges began their duties, which are onerous enough without being called upon to act as detectives. Were it once known such a system was rigidly enforced no "unpleasantness" would follow, and frands and chicanery disappear. Our southern friends should take the example set them by the Directors of the Ayrshire Agricultural Society some years ago. An "outsider" brought a bull which successfully competed in the open division, carrying off first honours, and was at once sold at a long price. His head was ornamented with a particularly stylish pair of horns, which were very much admired. Some inquisitive individual put back the hair at the roots, and made the discovery that the horns were false, stuck on with gutta percha. On this being communicated to the Directors the exhibitor was summoned before them, when they intimated that his prize was forfeited and his name for ever expunged from the list of members. The Fiscal, on behalf of the criminal authorities, then took the matter up, and he was tried at the next assizes for fraud and wilful imposition, fines refused, and condemned to an imprisonment of many months. The horns of the bull were real horns from another animal. The foliage of the rose blooms were real too, borrowed from another bush. The honey was also real, borrowed from other hives. The deceived purchaser of the bull could never expect him to reproduce the same horn, or the buyers of the rose the same foliage; those of the Canary the same golden tint; nor yet the Pettigrew hive the same amount of honey during a similar season, all ranking alike in the category of the false and deceptive.—A. REXFREWSHIRE BEE-KEEPER.

## FOOD FOR BEES.

ACCORDING to Dr. Edwin Lankester fresh cow's milk contains 86.0 per cent. of water and 4.5 of sugar and, of course, skim milk has a greater percentage of water and less of the heat-producing materials which form the cream taken off by the process of skimming. I maintain, therefore, that skim milk, as it contains a small portion of nutriment and transforms the sugar liquid into honey colour, is much preferable in preparing bee food than merely water "pure and simple." Mere thin sugar toffy, I think, is deficient in the consistence, the strength, the mealiness, the farina of honey, and to correct this defect I add oatmeal, which is the best and strongest of meal, and I find, as I stated in my first note, that the bees clear it away with quite as much dispatch.—A. T. W., *Kidwelly*.

[We have omitted some paragraphs. There is no "farina" of any kind in honey, whether you mean by that term the pollen of a flower's anthers, or meal, which is the synonym of "farinaceous matter." The most successful bee-keepers we have known feed only on a syrup of the consistency of honey, made of sugar, water, and a very slight addition of salt. That bees seek for saline matters is well known by those who have watched them alighting on pebbles by the seashore and the puddles in stable-yards.—EDS.]

PIGEON NOMENCLATURE.—In reply to your correspondent "TURKEY QUILL," it will, I think, be sufficient to state that, so far as I can understand his meaning, I described the Silver

Dun Carrier at Glasgow precisely as he himself would have done.—YOUR REPORTER.

**ORANGES FROM ST. MICHAEL'S.**—The British Consul at St. Michael's has sent to the Foreign Office, in a recent report, an account of the value of the fruit trade of that island with Great Britain, year by year, from the year 1747, when it commenced, down to 1872. The first export of oranges thence to this country is recorded in 1751, when  $3\frac{1}{2}$  boxes at 900 reis per box, amounting in all to little more than 3 milreis, were sent. The trade grew and multiplied; and 120 years afterwards, in 1871, the export comprised 264,925 boxes, at 1610 reis per box, or 426,932 milreis in all. In 1872, the Consul's returns show that there were 256,451 boxes of oranges exported from St. Michael's; their value was £80,705, and the export duty produced £599. Pine-apples and bananas are also cultivated. Our own Custom-house returns state that in 1872 we received from the Azores oranges and lemons of the value of £329,342. But though Great Britain absorbs almost the whole of the foreign trade of the Azores and imposes no duty upon the import of their fruit, these islands treat us with scant courtesy, for France and Prussia are allowed an invidious exception in favour of their merchandise, and an additional *ad valorem* duty is imposed upon British wares exclusively. Owing to this heavy duty French goods, which are favoured, are to be purchased at lower rates. The Consul has to state that tourists should be advised to visit St. Michael's in July and August only. The climate has been described as offering a nine-months rainy spring, and as a winter station St. Michael's is, as compared with Madeira, deficient in the comforts of life, and has not an enviable climate.—(*Times*.)

### OUR LETTER BOX.

**BOOKS (J. E.).**—Taylor's "Bee-keeper's Manual," published by Groombridge & Sons.

**MILMO AND BROUGHTON SHOW (Q.).**—It must have been a local Show, not being advertised.

**NORTHERN COLUMBIAN SOCIETY (W. C.).**—It was not advertised so we conclude it was a local Show.

**DUMFRIES SHOW (—).**—It was not advertised, so we conclude it was intended to be local.

**LEEDS POULTRY SHOW.**—Mr. J. Mason informs us, that in the class for old Black Red Game he obtained the first prize.

**LEWES POULTRY SHOW.**—Mrs. G. Meek should have been credited with the second prize for Dorking hens. As the Dorking, Dark Brahma, French, and Any variety classes were exceedingly good, those exhibitors whose specimens were very highly commended will receive an extra prize—viz., Viscount Turnour, Mrs. Brassey, Mrs. J. G. Hepburn, The Rev. T. Cochrane, Mr. H. W. Reville, Mr. J. Walton, Mr. G. W. Hibbert, Miss P. L. Blencowe, Mr. A. Wood.

**BROMLEY POULTRY SHOW (W. H.).**—We agree with "AN EXHIBITOR," that the names of the Committee should be published. All your suspicions are unfounded.

**BRAHMA VULTURE-HOOKED (O. A.).**—Judges consider vulture hooks objectionable, we do not know why, but not a disqualification. The "Poultry Chronicle" was long since incorporated with this Journal.

**POULTRY-KEEPING (J. Woollan).**—If you enclose seven postage stamps with your address and order "Poultry-keeping for the Many," it will be sent to you post free, and it contains all the information you mention.

**PACKING EGGS FOR TRAVELLING (W. D.).**—Eggs should always be packed in dry moss, as it is not affected by shaking, and the eggs do not then move from the position in which they are packed. Almost any other material moves from the shaking consequent on travelling, and often leaves a layer of eggs, bare of any protecting substance. A basket, flower-pot shaped, with a lid, we believe to be the best form of package.

**BREEDING IN-AND-IN (J. H. E.).**—Brothers and sisters are worse mating than parent and offspring. The yearly change is only a positive necessity when something more than eggs and table poultry are wanted. You may breed two years from the same birds, using the same cock, and eating or selling the young ones. If, however, you should breed one or two of surpassing merit, you might do away with the old bird, and run the young one with the hens. We repeat, these nice points want only to be observed where exhibition and perfect birds are wanted.

**COCK-CROWING ANNOYANCE (G. M. F.).**—We know no breed of non-crowing cocks, and it is the habit of British Cocker to proclaim the day, which now, we are thankful to say, gets earlier weekly. Many expedients, such as straps round the throat, have been tried, but all were failures. We do not think your neighbour can compel you to put away your crowing cock. Magistrates differ, and so do their decisions. The majority decide that cock-crowing is not a nuisance, especially when only one is kept. We give this opinion under correction, and with diffidence, believing with our old friend Sir Roger de Coverley, "Much may be said on both sides of the question." There is, however, one way of doing away with early crowing, and that is to confine the cock in a dark place. Come to an understanding as to an hour when the crowing shall cease to be a nuisance, and till then confine the bird. He may be put in a hamper, large basket, or box. He must be in the dark in a dry place, free from draught, till his hour of release, and need not suffer in confinement from it.

**DUCKS (A. T. W.).**—The only profitable Ducks in the Variety class are Mandarin and Carolinas. They breed freely, and their produce is always saleable. The Whistling Ducks do not breed as freely, and are not so popular.

**BANTAMS WITH CRIVE-CEURS (Jack).**—You may keep Black Bantams and Crive-Ceurs together safely. We have done it for years, and it is our opinion it may always be done, especially where all are of the same colour.

**THIN-SHELLED EGGS (Alpha).**—Have a heap of coal ashes and bricklayers'

limy rubbish mixed together under shelter, where the fowls can bask and obtain more chalky ingredients.

**DESTROYING BEES (Ignoramus).**—Cottagers usually suffocate bees when taking their honey, but it is a barbarous and unprofitable custom. Good bee-keepers use hives which enable them to take part of the combs, and yet leave a sufficient store for the bees. You can have a book, "Bee-keeping for the Many," if you enclose five postage stamps with your full address; that will instruct you.

**BEES DYING (James Gregg).**—The comb you have sent for inspection has doubtless been taken from a damp hive, or from one standing in a damp place or on a wet board, otherwise it would not have been so mouldy. The contents of the cells were covered with mould, and like puddle. It is impossible to state with certainty what has been the cause of the death of all the bees in one of your hives, and how those in another have been so greatly reduced in number. The cause may have been one or more of the following:—Foul brood, the loss of queens, their failing to meet drones at the proper time, or want of food. If, as you think, foul brood is in your other hives, they will not thrive. The bees should at once be placed among sweet combs. The comb which we noticed above has no diseased or foul brood in it.

**SKELETONISING LEAVES (J. E. K., Baltimore).**—We believe Mr. Kaye is a respectable man. Perhaps his book is out of print. We wish that some one at Dewsbury would bring this reply to his notice.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat.  $51^{\circ} 32' 40''$  N.; Long.  $0^{\circ} 8' 0''$  W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.				
	Baromet. ter at 32° and Sea level.	Hygromet- er.		Direction of Wind.	Temp. of Soil a ft.	Shade Tem- perature.		Radiation Temperature	
		Dry.	Wet.			Max.	Min.	In sun.	On grass.
1873-4.									
Dec.									
Jan.									
Th. 31	29.569	46.5	45.5	S.W.	deg. 59.8	deg. 55.6	deg. 57.4	deg. 56.6	—
Fr. 1	30.172	36.0	35.9	N.W.	40.3	45.4	38.1	69.4	0.065
Sat. 2	29.875	50.1	48.8	S.W.	40.8	51.0	34.9	51.9	0.078
Sun. 3	29.850	44.1	43.2	S.	42.0	48.4	41.7	65.1	0.083
Mon. 4	29.563	35.8	34.8	N.W.	41.2	40.5	33.2	67.4	8.0
Tu. 5	29.992	36.3	34.0	N.W.	37	40.4	32.1	66.8	30.7
Wed. 6	30.347	32.6	31.6	S.W.	38.4	42.7	28.0	61.3	24.6
Mean	29.837	40.1	39.0		40.0	45.6	38.6	63.1	31.2
									0.227

### REMARKS.

Dec. 31st.—Rain in the morning, fine at noon, but dull after.

Jan. 1st.—Foggy early, but fine at noon; rather dull after, though fine at night.

2nd.—Windy night, rainy morning, and at intervals all day, but fine at night.

3rd.—Rainy at intervals all day, though bright at times.

4th.—Very bright occasionally, and, with the exception of a few flakes of snow at 3.30 p.m., fair all day, but much colder.

5th.—A very slight covering of snow in the morning. A beautiful winter's day; bright though cold.

6th.—Rather foggy and frosty early, but a beautiful day.

Mean temperature of the week much the same as last, caused by the warmth of the earlier part overbalancing the increased cold of the last few days, which may be said to have been the first fine winter days that we have had.

The total rainfall of 1873 here was 22.67, being nearly 2 inches (or about 10 per cent.) below the average.—G. J. SYMONS.

### COVENT GARDEN MARKET.—JANUARY 7.

A VERY fair supply is well kept up, both out-door produce and that from under glass being sufficient; indeed, there is a most unusual supply of Grapes in the market, comprising retarded Hamburgs, Alicante, Gros Guillaume, Lady Downe's, and Muscat of Alexandria. Our home Pine-growers will now meet with a most formidable competition from those in St. Michael's, who are sending a splendid lot of Cayennes, completely putting the others in the shade for size, appearance, and quality, and which are sold at very moderate rates. Potatoes are a heavy trade, and large quantities at the depôts.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1	0	1	0	1
Chestnuts.....	1	0	2	0	0
Grapes, household.....	1	0	2	0	0
Filberts.....	1	0	1	0	0
Colmans.....	1	0	1	0	0
Lemons.....	1	0	1	0	0
Melons.....	1	0	1	0	0
Oranges.....	1	0	1	0	0
Quinces.....	1	0	1	0	0
Pears, kitchen.....	1	0	1	0	0
Pears, dessert.....	1	0	1	0	0
Pine Apples.....	1	0	1	0	0
Walnuts.....	1	0	1	0	0
ditto.....	1	0	1	0	0

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	1	0	1	0	0
Asparagus.....	1	0	1	0	0
French.....	1	0	1	0	0
Beans, Kidney.....	1	0	1	0	0
Beet, Red.....	1	0	1	0	0
Broccoli.....	1	0	1	0	0
Cabbages.....	1	0	1	0	0
Cauliflowers.....	1	0	1	0	0
Carrots.....	1	0	1	0	0
Cauliflower.....	1	0	1	0	0
Celery.....	1	0	1	0	0
Coleworts.....	1	0	1	0	0
Cucumbers.....	1	0	1	0	0
pickling.....	1	0	1	0	0
Fennel.....	1	0	1	0	0
Garlic.....	1	0	1	0	0
Herbs.....	1	0	1	0	0
Horseradish.....	1	0	1	0	0
Leeks.....	1	0	1	0	0
Lettuce.....	1	0	1	0	0
Mushrooms.....	1	0	1	0	0
Mustard & Cress.....	1	0	1	0	0
Onions.....	1	0	1	0	0
pickling.....	1	0	1	0	0
Parsley per doz. bunches.....	1	0	1	0	0
Parsnips.....	1	0	1	0	0
Peas.....	1	0	1	0	0
Potatoes.....	1	0	1	0	0
Kidney.....	1	0	1	0	0
Round.....	1	0	1	0	0
Radishes.....	1	0	1	0	0
Rhubarb.....	1	0	1	0	0
Salsafy.....	1	0	1	0	0
Savory.....	1	0	1	0	0
Scorzenera.....	1	0	1	0	0
Sea-kale.....	1	0	1	0	0
Shallots.....	1	0	1	0	0
Spinach.....	1	0	1	0	0
Tomatoes.....	1	0	1	0	0
Turnips.....	1	0	1	0	0
Vegetable Marrow.....	1	0	1	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 15—21, 1874.	Average Temperature near London.			Rain in 43 years	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
15	TH	British Museum opened, 1759.	41.7	28.9	35.3	13	2 47	18 44	47 5	58 0	27	9 44	15
16	F		42.0	31.0	36.5	20	1 8	19 4	59 6	46 1	28	10 5	16
17	S		42.6	28.7	35.6	15	0 8	21 4	0 8	51 2	29	10 25	17
18	SUN	2 SUNDAY AFTER EPIPHANY.	42.6	31.3	36.9	18	59 7	23 4	45 8	13 4	30	10 44	18
19	M	Twilight ends 6.25 P.M.	43.1	30.6	36.9	20	58 7	24 4	18 9	43 5	1	11 3	19
20	TU	Royal Horticultural Society, Fruit, Floral, and General Meeting.	42.4	30.6	36.5	15	57 7	26 4	41 9	14 7	2	11 21	20
21	W		42.9	32.0	37.5	23	56 7	27 4	59 9	43 8	3	11 38	21

From observations taken near London during forty-three years, the average day temperature of the week is 42.5°; and its night temperature 30.4°. The greatest heat was 63°, on the 19th, 1833; and the lowest cold 41° below zero, on the 19th, 1838. The greatest fall of rain was 0.88 inch.

## LATE-KEEPING GRAPES.



HERE is no department of fruit-culture in which there is a greater diversity of opinion than as regards the merits of late-keeping Grapes; nor is this diversity confined to the later introductions, but it embraces all kinds, with the exception, perhaps, of Lady Downe's, which certainly hangs in good condition longer than any other sort, and invariably yields an abundant crop of fine high-coloured fruit. Culture and manage-

ment must, of course, always exercise an influence upon the Vine and its produce, and there can be no doubt that some really valuable sorts have been hastily condemned from ignorance of their particular requirements. It would, therefore, I think, be to the mutual advantage of the raiser of a good Grape, and the public to whom he offers it for sale, if any peculiarities either in the Grape or its culture were clearly set forth in the first instance.

In discussing this subject, and in a comparison of results, a liberal margin should be allowed for the influences of soil and situation, the vigour of the Vines, and the kind of structure in which they are planted, it being quite obvious that a weak point in either respect may lead to total failure. Given a light airy vinery, with a suitable apparatus for the production of artificial heat, a thorough yet graduated ventilation, and a sound well-made border, other things being equal, success in the fullest measure usually crowns the efforts of skilful culture and management.

The Grapes which I am now sending to table are from Vines that have had the benefit of most of these advantages, and yet the measure of success is hardly so full as could be wished, owing to the imperfect development of one or two new kinds. The Vines are planted in a narrow interior border of about a yard wide, the roots spreading thence under wide arches in the front wall into an extensive outer border. I have described the formation of this border in a former paper, and to show that the Vines are in a flourishing condition I may state that stout canes of about 25 feet long were produced almost without exception in the first or planting season; and this is not advanced as an extraordinary instance of vigour, but rather as an example of what growth may reasonably be expected from any healthy young Vine. A few details of culture, although marked by no novelty of treatment, may yet prove useful to beginners.

TEMPERATURE.—The aim has been to keep up a steady equable temperature, 50° being the starting maximum, increasing slowly and gradually with the growth, so that when the bunches were in flower a night temperature of fully 75° was maintained. After the fruit was "set" this was reduced to about 70°, which was the standing temperature till the entire crop was ripe; since then artificial heat has only been required to disperse damp, or, rather, to maintain sufficient warmth in the pipes during damp weather to keep a dry atmosphere in the interior of the vinery.

As these Grapes were brought to maturity during the hot weather of the summer and early autumn months, solar heat exercised an important and most beneficial influence upon them, it being a standing rule that on all bright days every vinery containing an unripened crop of fruit shall be closed in the afternoon when the thermometer is at 90°; and when the sun is shining full and strong this high temperature often increases by 5° or 10° after the ventilators are closed. Under such favourable circumstances the heating apparatus becomes rather a valuable auxiliary than the principal source of heat, and its aid is not required till late in the evening.

VENTILATION.—Air in proportion to the condition of the weather was always admitted through the ventilators at the highest part of the roof as early as possible in the morning, except during the prevalence of cold cutting winds, and during the colouring of the fruit some of the external air was admitted night and day. After the crop was ripe, both front and back ventilators were opened fully and constantly till the damp dull weather set in, when it was reduced to an opening along the top of barely half an inch, just enough, in fact, to keep up circulation.

WATERING.—Water played an important part throughout the season of growth, the syringe being kept in frequent play till the flowers began to expand; the evaporating trays were kept well filled, water was constantly thrown about the floor, and tons of it and weak liquid manure were poured upon the inner border, the main drain sending out such a flow after each application as would very likely startle anyone having a heavy soil or badly-constructed border to deal with. Some caution is certainly advisable in this latter operation, and I would advise care and moderation to those having to contend with the evils of a faulty border. This liberal use of water was continued up to the time of flowering, and again afterwards till the colouring was well advanced. The syringe was not used after the Grapes were visible, yet I failed to discover the slightest trace of red spider throughout the season. When the bunches were in flower they were examined twice daily, and the pollen applied with a brush whenever it appeared necessary; generally, however, pollen was so abundant that a sharp rap upon the trellis would cause the tiny capsules to fall by thousands.

The varieties grown were—

*Barbarossa* [Gros Guillaume].—The bunches of this kind were so numerous that more than half had to be taken off. They were almost all of the large size that is so characteristic of the fruit of this Vine. Some extra fires were required to fully ripen them, but the fine, rich, crackling, and very juicy fruit, and the noble appearance of the bunches when cut, afforded ample compensation. This Grape should rank very high upon the list of standard sorts. It is true enough that it requires a high temperature to develop its full rich flavour, but it is equally true that it is eminently worthy of it; for, as Mr. Pearson states in his little work on the Vine, it is, with proper treatment, "one of the very best black Grapes grown."

*Black Alicante*.—This is an especial favourite with me. It is a magnificent Grape. The bunches are large, with wonderful shoulders, and very large berries of a fine deep colour, and splendid bloom. It produces fruit abundantly, and is decidedly one of the best late Grapes.

*Lady Downe's*.—This useful Grape has been quite equal in colour and size of berry to Alicante, but its bunches were not nearly so large.

*Madresfield Court Muscat* had large, well-shouldered, tapering bunches, with large, rich, and juicy berries of a most delicious flavour. It produced its fruit abundantly, and is altogether a fine and most desirable variety; but it did not keep well; there was an evident loss of flavour perceptible soon after it was fully ripe, and the berries soon began to shrivel. From my present experience of it I should certainly in future assign it a place in an intermediate house.

*Mrs. Pince's Black Muscat*.—This has quite disappointed me. It is very vigorous, very free-bearing, sets its fruit well; the bunches were large, well-shouldered, and symmetrical, and it hangs well; but the berries were small, deficient in flavour, and very badly coloured. Yet I do not wish altogether to condemn it, for I have seen it in much better condition in other hands, and am not without hope of future success.—EDWARD LUCKHURST.

### JUDGING ROSES.

MR. CAMM seeks to elicit the opinions of Rose-amateurs on the subject of judging Roses at shows; and if I interpret his meaning rightly, he wishes not only the particular points he has named to be fairly discussed, but also that the whole question should be considered, with a view of laying down, if possible, some general principles in accordance with which the judging should be performed, so that a common understanding may be arrived at on the main points that determine the award of prizes.

The judging of Roses, like the judging of other subjects in horticulture, has always been a vexed question—probably always will be, not so much from the difficulty or impossibility of pleasing everybody, which it is not worth while to attempt, as from a cause which Mr. Camm has himself illustrated—namely, those ordinarily regarded as authorities in the matter hold opinions widely diverging from one another, and from whom, therefore, uniformity of decision can scarcely be expected at all times.

But there are points on which judges of Roses at shows can agree, or rather on which they must agree if they perform their duties conscientiously—a postulate not requisite to be brought forward in this discussion; and these points are so obvious that it is quite sufficient if they are stated briefly but clearly. This I will endeavour to do before taking up Mr. Camm's two questions. At every show of any pretensions at all, the judges are provided with a copy of the schedule of prizes to be awarded to the several classes or groups, as the case may be, and with such regulations as specially refer to these classes, at least so far as their duties are concerned. In all properly regulated shows the stands of the exhibitors are, or should be, arranged in their various classes and groups in good time, and in positions favourable for inspection both by the judges and by the visitors admitted afterwards—matters of paramount importance to all concerned; for if the flowers are staged late the judges have either to hurry through their duties in a manner anything but satisfactory to themselves, in order to complete the awards before the admission of visitors, or, if visitors are admitted before the judging is finished, the inconvenience is sometimes so great as materially to impede progress. The judges should always have time allowed them, a little over rather than under the assigned hours, for when the competition is keen and the number of exhibitors great, their duties are not only onerous, but many minor points have to be carefully considered and comparative merits evenly weighed. I remember an occasion when acting as one of the censors, that owing to close competition among a considerable number of exhibitors, the visitors were admitted before the judging was complete, and we received all sorts of unsolicited suggestions upon the merits of the specimens to be decided. Perhaps the hints came from the exhibitors themselves; we could not tell, only we were made aware that our decisions did not all quite coincide with the opinions of some of our self-constituted advisers.

Let us assume, however, that all arrangements are complete by the appointed hour, and that ample time is allowed for the

judges to perform their task, and the services of a competent and sufficient staff secured; there are, I repeat, certain points on which they must agree, whatever may be their individual opinions on minor matters, whatever theories they may have formed as to what ought to be, or whatever "*penchant*" they may have for this or that variety or class of Rose. They must first disqualify any stand that does not fulfil the requirements of the schedule and accompanying regulations. For example, if twenty-four different kinds are required, they must see that there are not two or more of one kind in the same collection, or that two or more of one kind are not staged with different names, for these accidents have sometimes occurred from inadvertency. A most excellent stand was once disqualified with much regret on the part of the judges because it contained two blooms of one variety, but which was known to be an oversight of the exhibitor. It is also the duty of the judges to see that the specimens are correctly named—a requirement generally stated in the regulation, and almost always assumed if not stated; but it certainly is not the duty of the judges to name the exhibitors' flowers for them. It is a controverted point whether misnomers should disqualify; the question is not without difficulty, owing chiefly to the enormous number of Roses with different names that have been introduced into cultivation, and which has, almost as a natural consequence, led to occasional mistakes, and which are therefore the more pardonable. If one or more, but not many, misnamed specimens occur in a stand of good flowers of the requisite number of kinds, it would evidently be an undue exercise of severity or even harshness to disqualify on that one account. Leniency in this respect ought to be, and I believe is observed by the best judges; at least no serious detriment to the principles on which the show is established can arise from a judicious exercise of it.

As a matter of course the stand containing the greatest number of perfect and best grown blooms must have the first prize in its class, and the next in number and quality the second, and so on if more are to be awarded. It is when the competition is severe that such points as Mr. Camm has mooted arise for consideration. Let us again assume as our instance that the class to be judged is twenty-four blooms of any kinds, distinct, one truss of each. It is quite clear that if thus stated in the schedule, or to the same import, the exhibitor may, if he chooses, select his flowers from any family or class of Roses. Whatever varieties are shown, the judges must decide according to the actual condition of the flowers submitted to them; however fine some of them may be, if past their culmination (if I may use the term) they cannot assign to such a consideration equal to what they would do if these flowers were in their prime—in other words, their exhibition value is deteriorated. Similarly of flowers exhibited before they have attained their perfection; judges are not to suppose what they would be if left on the plant they were cut from for another day or two. Nor can any account be taken of very small blooms however perfect they may be in form or colour; these may be admirably suited for a button-hole, and as such might form a class by themselves for the gratification of those who delight in decorating themselves with floral ornament. Exhibitors frequently fall into the mistake of cutting their flowers overblown, or too soon before expansion, under the impression that judges will give them the same or nearly the same amount of credit as they would do if they were at their best.

If the competition, say, for the first prize is so close as to require a comparison of the merits of the individual flowers in the competing stands, the judges ought in fairness to the exhibitors to take into consideration every circumstance for and against; form, size, and colour predominating. But these are not all: they must know that Tea-scented kinds engross a much larger degree of attention on the part of the cultivator than any other family of Roses, and that among them are found variety in form, colour, and beauty not yet attained in other kinds; so that to leave out the consideration of these qualities would be to throw indirectly discouragement in the way of their culture. I therefore agree with Mr. Camm very decidedly that the insertion of two, three, or even four well-grown trusses of Tea-scented kinds in a stand of twenty-four does materially improve it. Where can we yet find a finer yellow than in *Maréchal Niel*; a more beautiful blush pink than in *Souvenir d'un Ami*; a more pure white, with delicate centre, than in *Devoniensis*? Nor must our old but somewhat capricious favourite *Gloire de Dijon* be forgotten. Not only these but others of the same race can be grown quite large

enough for exhibition. But that a Tea Rose, even in the highest perfection, should have a double exhibition value assigned to it, or, as Mr. Camm says, two points to the others' one, would be to give a sort of mathematical precision to Rose-judging which it is not susceptible of. The science of judging Roses has not yet become a deductive science; it is still an empiricism, and it will be some time before absolute certainty is arrived at in all its aspects.

It is quite consistent with fairness that the judges should not pass unnoticed the arrangement and symmetry of the whole stand, comparing such with its competitors; but in my opinion distribution of colour should have precedence over uniformity of size. Artistic taste is not always satisfied with seeing the most charming of flowers set-up like a squad of volunteers at drill. I am one of a very few, perhaps, entirely at issue with the present mode of exhibiting Roses, but to enter upon this question now would be too great a digression.

I wish to add one remark on size. Granted, however, that large Roses are desirable, they are always admired and sometimes wondered at; but it should be remembered that there are yet very few varieties naturally large with all the perfection of Charles Lefebvre, Baroness de Rothschild, Maréchal Niel, and Marquise de Castellane. There are undoubtedly many large Roses in cultivation, and even monstrosities, but most of them are either flat, unsymmetrical, coarse in petal, deficient in colour, or otherwise objectionable; while there is a multitude of others of surpassing excellence, which, though not naturally so large as the kinds named above, nevertheless form the body of every Rose exhibition. To set-up a fictitious standard of size, thereby inciting amateurs and exhibitors to aim at producing abnormal flowers, to overstimulate and kill their plants, inducing hypertrophy and a moiety of the plagues of Egypt among them, cannot tend to a healthy promotion of Rose culture.—A. H. KENT.

### WINTER-DRESS YOUR FRUIT TREES.

This is no advertisement. I have nothing to sell. I merely wish to point out what a vast deal of time, anxiety, and perhaps fruit (if the midsummer frosts do not come again) can be saved by timely attention to the trees in winter. I suppose no good gardener now believes in late pruning; all should be finished at the first opportunity after the principal leaves have fallen, and most of it ought to be done before that time. The worst time is undoubtedly just when the buds are swelling.

As soon as the pruning is finished no time should be lost in taking care of the fruit buds that remain. Bullfinches I see are getting more numerous than ever; they will soon make an onslaught on the Cherries and Plums if left to themselves. Eggs of aphides may be seen clustered round the buds of Peach and other trees in the most sheltered positions; and red spider, if not seen now, will soon make its appearance when the trees begin to grow. Now is the time to battle against all these enemies with a chance of victory. Leave it till the spring when the buds are beginning to swell, if the bullfinches have left any, and probably you may not get rid of your small tormentors all the summer, certainly not till your trees are damaged more or less. The insects will seem to be in the buds as they open, and will grow faster than the buds; the young leaves will be crippled and curled, and form a comfortable home from which you can scarcely dislodge them without removing or damaging some of the leaves, and the consequence will be that the best part of the spring will be past before you get a healthy shoot. If after that your wood ripens in autumn, you are fortunate.

There are many mixtures recommended for dressing fruit trees, some of which kill the insects, some kill the trees, and others kill both if used as directed by the vendors. The following is the best I have tried; it can be made by anyone, is quite harmless, and as far as my experience goes, birds will not touch it. The ingredients are a quarter-peck or more of quite fresh quicklime, a pint of sulphur, and  $1\frac{1}{2}$  lb. soft soap. Choose lime that weighs very lightly, dip a few of the lumps in or sprinkle with water (hot water is the quickest in action), and place in a bucket or other vessel; sprinkle a little of the sulphur thinly over it, then add more lime just damp enough to slack, and more sulphur on the top of it, repeating this till all the sulphur is used. When the lime is slacked it will be seen that the sulphur is quite dissolved, and is scarcely visible, except in the darker colour it has given to the lime. The quantity of lime used is not important, so long as there is

sufficient to dissolve the sulphur. The soft soap should be dissolved separately, and afterwards mixed with the lime and sulphur, and sufficient water added to make three gallons in all. If the mixture is not thick enough to apply with a brush, clay or more lime may be added; if the glaring white is objected to, mix soot with it. If mixed in the way I have described and applied in dry weather, no amount of rain will wash it off; but if lime is used that has been some time exposed to the air, the sulphur will not properly dissolve, and the first shower will wash all away.

It is necessary to caution my readers against dissolving the sulphur in a house containing plants in a growing state, the gas emitted will burn up every leaf just as completely as if fire had been used. I have, however, never found trees injured from being painted with this mixture; it is only the sulphurous gas that is dangerous, and that, probably, would not injure plants in a dormant state.—W. TAYLOR.

### THE KITCHEN GARDEN.—No. 4.

In this paper I purpose making a few remarks upon the extent of kitchen-garden ground likely to be required among those for whom I write. There may be a difficulty in laying down a rule for one and all, but I doubt not that I shall be able to say sufficient to afford some guide to those who may require a few hints.

One of the first considerations is the number of persons to be supplied from the garden, and next is the style of living, which varies considerably according to the company entertained and parties given. There is a great difference, too, in individuals as regards the consumption of vegetables, for while some families require a large quantity others consume comparatively little. Of fruits of different kinds I believe the consumption is more equal, for there are few, if any, who do not like to have all the fruit that can be grown in gardens such as I am writing about, especially of Gooseberries, Currants, Raspberries, &c. Again, some persons have a fancy for particular vegetables, Asparagus or Sea-kale for instance; and if forced supplies of these are required from Christmas onwards, much more space will be needed for their cultivation than if they were only to be used at their natural season. In fact the vegetable luxuries indulged in, and the length of time during which they are required, will be some guide to the extent of ground needed for their growth. One or two other things must be taken into consideration. For instance, some soils are not so fertile as others, and will not produce the same quantity on a given space or of such good quality; this, however, I do not think a very great difficulty, as soils can be much improved and made more productive by a judicious system of cultivation.

Before settling upon the extent of the garden proper it should be ascertained whether the coarsest of the vegetables, as the main crops of Potatoes, Carrots, Parsnips, and the like, are to be grown in an outside slip of ground or in a field; many proprietors of small gardens either do that or purchase such supplies, so that this makes a material difference in the size of the garden to be formed. I am no advocate for enclosing more ground than is required, rather would I err the other way, for it is a question in many places when such is the case whether, under good management, a smaller garden would not supply everything required, and a large garden not fully cropped looks anything but well; besides, it offers an inducement to crop the spare ground with something that may prejudicially affect its fertility. For instance, I have known more than one garden where the vacant ground has been planted with forest trees, such as Chestnuts, Ash, Beech, and Oak, and almost every particle of nutriment taken out of it. When this ground is again wanted for vegetables they are found not to thrive satisfactorily, the mistake is discovered, and much time and expense incurred in restoring fertility.

Mr. C. McIntosh, when writing on the subject years ago, states that to every four grown-up persons a rood of ground should be allotted, and so far as my experience goes I have no reason to doubt his estimate; therefore a garden enclosing an acre of ground may be set-up as one of very fair size for an amateur. Of course the extent may be less or greater as circumstances dictate, but I am not calculating that all gentlemen would wish to indulge in every garden luxury provided in families of rank; but in an acre of ground one might have his little greenhouse and vinery, a small pit and frames, and if Potatoes and some other common vegetables are provided elsewhere, there will be employment for one active man constantly, with perhaps

an assistant at busy times. It is difficult, however, to give a correct estimate of the labour required for a garden, for where one man will be sufficient in some gardens of an acre, others of that size will need two or three, so much depends upon the arrangement and convenience of obtaining everything connected with a garden. As an instance I will suppose that there are two gardens of one size—one shall have the water laid-on to every part and the other shall not. Imagine the extraordinary difference in the labour attached to it, and in dry summers a man's time might be wholly taken up in watering his crops to the neglect of other things. In my opinion this is the only way to judge of the amount of assistance required whether in a large or small garden.—THOMAS RECORD.

### TEA ROSES.

THERE has been of late quite a commotion respecting Tea Roses, and I am very glad to see it, as there is always some good derived from discussion. With regard to Tea Roses in exhibition stands, I am firmly of opinion that one of these is not complete without the Teas. Where can you get those fine tints in the Hybrid Perpetuals as in the Teas, which are delicate in colour, fine in texture, and very large if well grown? Where can you find a Hybrid Perpetual equal in colour to *Devoniensis*, with its beautiful waxlike petals, so chaste and striking in appearance? Then take *Madame Bravy*, a charming Rose, very large and almost perfect in form, its colour a beautiful cream, blending splendidly with the hues of the Hybrid Perpetuals. Then we have *Souvenir d'un Ami*, *Souvenir de Elise Vardon*, *Catherine Mermet*, and *Belle Lyon-naise*, all of the first order for size, substance, and delicacy of colour. How can we discard them as not to be shown with the Hybrid Perpetuals when they harmonise so nicely with each other? I contend that if such be the case it would be a monstrous blunder. Fancy how monotonous a stand of Hybrid Perpetuals would look (although they might be fine blooms) especially if they were nearly of one colour, as they most probably might be, such as *Alfred Colomb*, *Marie Baumann*, *Léopold Hausburg*, *Sénateur Vaisse*, *Exposition de Brie*, &c. Stands of thirty-six, twenty-four, and twelve, without the introduction of Tea Roses, would be very dull, would want life; but combine the two families, then you will have variety, contrast, and distinctness of colour. I trust that the separation of Teas from Hybrid Perpetuals will never take place.—MABLEN WHITTLE, *Belgrave*.

### THE ACHAN PEAR.

THIS well-known Scotch Pear, I believe, is held in high esteem, and seems to do remarkably well in Scotland, but is of little use as a dessert Pear on this side of the Tweed; indeed it is seldom met with in England. I was, therefore, somewhat surprised to find a tree of it here against a south wall, although we have so many varieties better deserving such a position. This, however, was accounted for by the fact that a Scotch gardener made this garden some sixty years since. When I took it in charge I found this and a few other trees much neglected. Not knowing what the tree might be, I commenced renovating it by reducing the old worn-out spurs that had formed an almost impenetrable mass about 18 inches from the wall, also a mass at the top, which, with some of the main branches, was displaced, and as much young wood laid-in during the following summer as could be done. By these means I have had for the last three or four years an immense crop of fine large fruit, but of course useless for the dessert, being dry, almost flavourless, and decaying as soon as ripe.

Pears being very scarce anything was better than none, and it occurred to me to send in fruit of this variety just before they came to maturity to be used for cooking, and for that purpose they are thoroughly appreciated by the family at table. I do not assert that they are equal to the *Catillac*, *Belmont*, or *Uvedale's St. Germain*, either in colour or flavour, but a little spice, cochineal, &c., will make a vast difference and produce an excellent sweetmeat. They are preserved in jars by the score, keep well for months, and are found of great use during the winter when other fruits are scarce.

I am rather glad that I did not carry out my idea of replacing the tree above referred to with a better variety. Indeed a young tree had been placed near it to take its place, for I like all young trees if possible to be almost in a bearing condition before planting them in such places, so that wall space may not be idle for at least four or five years.

I will just mention in favour of growing this variety—first, that it is a sure cropper, frosts doing but little damage to the blooms when it kills all others; second, that it is scarcely affected with canker, in proof of which there is the fact that it has stood here for sixty years, when trees of many other varieties have died.—J. TAYLOR, *Maesgwynne*.

### FLOWERS FOR OUR BORDERS.—No. 24.

#### CAMPANULA CORONATA—CROWNED CAMPANULA.

AMONG floral treasures the Campanulas hold a conspicuous place. Scarcely a country within the temperate zone which does not contribute several species to this very interesting genus. Their general appearance is well known, for the gardens are few indeed in which some Bellwort is not to be found. In so extensive a genus considerable differences of habit would



*Campanula coronata*.

naturally be looked for; and, accordingly, we find species varying from a few inches in length—as in the elegant little *C. pumila*—to several feet, as in the equally well-known *C. pyramidalis*. Some of them are trailers, of which class the *C. garganica*, often cultivated as a window plant, may be cited as an example; but far the greater portion of the species are of erect growth. A few are annual, and there are about twenty biennial species; but the genus consists chiefly of herbaceous perennials. White, and various shades of violet, blue, and purple, are the prevailing colours; there are, however, several yellow species, and also a few of a reddish lilac, but none of a distinct red tint.

The present plant is a hardy perennial, growing about 3 feet high, and having foliage closely resembling that of the peach-leaved Campanula, *C. persicifolia*. The white calyx, with its green tips, has a very pretty effect, and we strongly recommend the species for general cultivation. It is of easy increase by seeds or division of the roots in spring.—(W. Thompson's *English Flower Garden*, Revised by the Author.)

A GARDENER'S SUPERSTITION.—On the first day of this month and year a cook needed Parsley to garnish some dishes of the breakfast-table; but the gardener, an old Lancashire

man, replied, "Wait awhile, cook, the lad's gone for a loaf." Cook saw no why in this because for delay, but the gardener was resolute; however, the basting-ladle and spade did not come into collision, for the loaf arrived, and then the gardener repeated the rhymed proverb:—

"Take out, then take in,  
Bad luck will begin;  
Take in, then take out,  
Good luck comes about."

#### NOTES FROM MY GARDEN, 1873.—No. 2.

Florist though I am, my first subject shall not be about florists' flowers, but one more generally interesting. There are multitudes of people who not only do not care for, but who positively (dreadful people!) ridicule the taste of a man who can go into raptures over a frame of Auriculas or find out the minute differences in a stand of Picotees; but there is hardly anyone insensible to the value of a good dish of "taters." I say hardly anyone, for I have known people who, so long as it was a Potato, were perfectly indifferent as to whether it was mealy or waxy, white or yellow, round or kidney. But they are the exceptions; happy individuals whom indigestion never disturbs. I, alas! am differently constituted, and think one of the first requisites for daily food is a good Potato, and, as I dare say some of the readers of our Journal will recollect, have not unfrequently bored them with discussions and notes on this very common subject. Most of the new kinds of Potatoes have been submitted to me for trial, while of all the old-established sorts I have had many years' experience. Of those that I tried in the past year I now proceed to tell.

What a strange and inexplicable mystery is that Potato disease! Strange that we should have been growing the Potato for three hundred years, and that not until 1846 should that terrible malady which brought desolation and despair to thousands of homes have made its appearance. Inexplicable too, for although it may be admitted that it is dependant on certain atmospheric influences, we may safely infer that these disturbing elements were no novelty, and that they existed before 1846 as well as since; and I know nothing that ought to teach scientific men a sharper lesson of humility than this, that with a matter which they can see, and feel, and test, and submit to microscopic investigation, they are, after nearly thirty years' knowledge of it, neither able to tell us the cause or suggest a remedy; and yet too many of this class are ready enough to decry as credulous those who believe in, although they cannot comprehend, the ways of Him "Whose footsteps are not known."

The past year has been one of strange experience also. I confined myself to comparatively few sorts, comprising Lee's Kidney, Myatt's Prolific Ashleaf, Waterloo Kidney, Lapstone Kidney, Paterson's Victoria, Sutton's Red-skin Flourball, Sutton's Hundredfold Fluke, Yorkshire Hero, and Dalmahoy. Of these the two former were planted in my garden, and the remainder in a piece of very light sandy soil just suitable for growing Potatoes. All came up well, but the late frosts in May sadly interfered with the produce of the earlier sorts. My plan is always to lay out the seed of the early sorts singly, so as to allow them to spear about an inch. This secures an even crop, and of course brings them forward more rapidly. Well, all these were lifted early. Lee's Kidney I found a very early Potato—as early as the old Ashleaf and very prolific, the tubers large and well-flavoured. I do not know its origin, but it was sent out by the Messrs. Lee, of Hammersmith, and is, as far as my experience goes, the best of the very early sorts. These were soon gone, for I had but few of them, and were succeeded by Myatt's Prolific. Of this the crop was fair, and not a symptom of disease amongst them. The greater portion of these I sent to market, for at that early time one can realise a good price for them, and they are not keepers. I found that my stock, though a selected one, was slightly deteriorating, and so I have this season determined to obtain fresh seed from a distance.

My later crops of Potatoes were all grown in the field, and nothing could have exceeded the healthiness of their appearance up to the very end of August; and as the first week of that month, which I have always regarded as the most fatal time (oh! how well do I remember that terrible week in 1846!) had passed over safely, I was led to hope that all would be well. But then came the September rains. Spots began to show themselves on the leaves, and on digging-up a hill or two unmistakable proofs of the disease were noticed. Previous to this I had dug-out and eaten some rows of Dalmahoy, a very

favourite Potato with many, and deservedly so; amongst these I had no disease, while, on the other hand, Waterloo Kidney, which I had hoped well of, was terribly touched. Lapstone, which I still maintain against all comers to be the very best Potato grown, was also tolerably free from the blight, although at other seasons I had found it easily affected. Yorkshire Hero I cannot, I am sorry to say, tell much about this season, for through some blunder it had got mixed up with another kidney, and therefore it must remain unnoticed. My mainstay was to have been Paterson's Victoria, for last year; in the same sort of ground, it turned out so well and kept so long that I entirely reversed my former unfavourable opinion of it. My crop this year was twice as good, the tubers splendid; but alas! when I dug them fully one-half were gone, and as usual, the largest finest tubers were those most hopelessly gone. I can well understand the pitiable look of despair with which the labouring man must regard his tainted crop on which he had built such hopes. There remained, then, but two sorts—Sutton's Hundredfold Fluke and Red-skin Flourball. Of these I had a few long rows each. They were grown alongside the Victorias, and although the latter were so diseased I did not dig-up half a dozen had tubers of either of these two sorts, while both had heavy crops. Why this should be I know not, but I see my experience has been that of many others. As to the former, I regard it as a well-flavoured and mealy Potato, fit for general use. Sutton's Red-skin Flourball, I see, has had its admirers and detractors. My own experience is decidedly in its favour, but then it should be baked, and not boiled or steamed. No large Potato ought to be submitted to these processes of cooking.

Such, then, is my experience of Potatoes this season. I have suffered, as most have done, from the disease. I have not found any remedy. I endorse my friend Mr. Radclyffe's "early ripeners and long keepers" as the Potato motto. I still prefer for flavour the Lapstone to all others. Practically for freedom from disease I claim the palm for Hundredfold Fluke and Red-skin Flourball.

I had a few of the Early Vermont submitted to me. It seems to be a good form of Early Rose and cooks well, and if earlier than that variety deserves its name.—D., Deal.

#### HELLEBORUS NIGER.

PRESUMING that I have the same variety as "CENTURION" has submitted, I should like to advise its extended culture. Its blooms are 2 to 3 inches in diameter, of pearly whiteness, most of them having the accompaniment of a pink bud. It is a winter-flowering plant, and for cutting from is no unworthy rival to the beautiful *Eucharis amazonica* if only a hand-light or other covering be given to keep off the rains, which otherwise mar its purity and cleanliness by the up-dashing of the soil. A solitary plant thus protected is now, and has been for some time, producing a great profusion of bloom, which is extremely useful. This morning, under the anything but pleasant influence of 10° of frost, the blooms are as fresh as ever.

It is a plant that removes well, but is not of quick increase; and I think there is no real gain in dividing it into very small bits, nice-sized pieces establishing themselves so much quicker. The first fine weather after blooming is the best time for increasing stock, but good-sized flowering clumps transplant well at almost any time. Even if I had a chance of a supply in the hottest weather of July I should not say "No, thank you," but I should prefer them in autumn, as their growth would be certain then, and produce blooms at Christmas.

I imagine this is a very old-fashioned plant, but it must "come in" again. Both the season of its flowering and its beauty are claims to its future spread and increase, and it is worthy of being encouraged as incoming when nearly all other flowers have gone.—J. W.

#### DR. HOGG GRAPE.

ALTHOUGH this delicious Grape was sent out two or three years ago, it is very seldom seen in cultivation, and many good gardeners have probably never heard of it. Dr. Hogg Grape was raised and placed in commerce by Mr. Pearson, of Chilwell, a fact which is alone a guarantee of its merits. I have had no experience with this Grape planted out in a permanent border, but I was so much impressed with its good properties as exhibited by a Vine fruited in a pot last season, that I have decided on planting at least three in a small vinery this spring.

Dr. Hogg is a white Grape of the Frontignan class, but both in bunch and berry much superior in size to the old White Frontignan, though possessing the same exquisite Muscat flavour. It is a very free setter, with long tapering bunches, slightly shouldered; berries round and of good size, and it is an extraordinary bearer. The plant fruited here last summer was grown in an ordinary 10-inch pot; it was by no means strong, for it came from Mr. Pearson as a planting cane, but being anxious to see the fruit I allowed it to bear, and was rewarded with six fine bunches, which finished well, and weighed in the aggregate 8½ lbs. So fine were they, that I was able to exhibit three bunches in a collection of fruit at one of our local shows, where it was pronounced by many good judges to be one of the best new Grapes yet sent out. I have no doubt that when better known, and when grown under more favourable conditions, it will hold a prominent place among the best established varieties.—J. W. O.

### DISBUDDING MARÉCHAL NIEL—MANETTI STOCKS.

I HAVE in the open ground a Maréchal Niel Rose on the Manetti stock. It was planted in November, 1872, and last season threw out a shoot some 6 or 7 feet long, but did not bloom. I have this shoot well staked, and every point on it is now showing bloom. I counted on the 1st inst. twelve fully formed buds—I believe there are more. Ought I to remove the buds, or let them take their chance? If I remove them, are the same points likely to bloom again? Hitherto we have been unable to bloom this Rose here, and it is the only one we have not succeeded with, our Roses performing creditably at our local flower shows. I should perhaps mention that the Rose is not against a wall or protected in any way, but we are fairly well sheltered, and the season has been an exceptionally mild one here.

I shall also feel obliged if you will give me a hint as to where I can procure Manetti Rose stocks. I cannot obtain them from our nurserymen here. The Manetti is the only stock on which I can bloom my Roses to perfection, but certainly my soil is very light.—A COUNTY DUBLIN AMATEUR.

[We should advise you to let the buds remain. It all depends upon favourable weather whether they will open or not, but it will not interfere with its future blooming whether you leave the buds on or not; and if they fall off this spring, merely shorten the shoots to a sound eye, and do not cut back too hard. Manetti stocks can be had from several English nurserymen, as Mr. Cranston, King's Acre, Hereford, or Mr. Harrison, of Darlington. Once get a few good plants, it is easy to perpetuate your stock by cuttings.]

### TO YOUNG GARDENERS ON RENOVATING OLD FRUIT TREES AND OTHER SUBJECTS.—No. 2.

If there is any one thing more than another in which modern gardeners have advanced, it is restricting over-vigorous growth by root-pruning instead of by excessive branch-pruning, and so causing the production of bloom-buds rather than brushwood. Of course root-pruning is only resorted to when growth is made at the expense of fruit-bearing. To secure the full benefit of this system it is necessary to commence with young trees, although when practised with care and judgment it is likewise advantageous to old trees of rampant growth. In no case, however, should it be carried to excess, otherwise in a few years the tree will be exhausted by over-production. If we do not carefully study the right balance the fruits will be small and of indifferent flavour, and the channels for the flow of the sap will be so contracted that they will hardly expand, if at all. In such an event, therefore, it is needful to head-down, in order to secure new channels through which sufficient nourishment can pass to allow of the free development of the flowers and fruits. It is not from scrubby fruit buds that we obtain the best fruit, nor from a thicket of wood caused by excessive pruning, and furnished with a few weak bloom buds, but from young shoots of few years' growth. Here, then, is the happy medium between an assemblage of starved buds and over-growth—such, for instance, as that resulting from injudicious heading-back, where numbers of contending watery shoots destitute of fruit are produced. With espalier trees, again, I have seen a clean sweep made of all the spurs, leaving the branches like so many bean sticks. What can be expected from such treatment, if the tree is healthy, but a mass of

shoots, not a few blanks, and no bloom buds? "Pinch-in," some will say. So you may, and fresh growth will be the result. Root-pruning, however, in the autumn after this unpractical and unnecessary treatment may effect the object in view.

It is well known, when a tree has been subjected for years to excessive pruning, and has formed large masses of useless spurs full of eyes, that these are ready at any favourable moment to break into rampant shoots, which by their broad-gauge channels draw away the sap to such an extent that the contracted ways to the weak surrounding blooming spurs have not the least chance of carrying any nourishment, and the flowers unfold only to fall from want of this. It is generally found that the wood-producing clusters proceed from the main branch with a clean base of even a few inches long, and often the bloom-spurs around it likewise spring from the main branch. Here, then, is the opportunity to at once remove with a small saw or a knife the useless clusters, and leave the bloom spurs to appropriate the whole supply of sap that previously was consumed in building-up wood to be at once displaced. The whole economy of the tree is disordered should there be bloom buds intermingled with the clusters of wood-producing eyes, and not around and beneath. In this case have a fine saw or pair of French nippers, as I call them, and take out all except the bloom buds. I have often made trees which were considered shy bearers before produce a good crop by this treatment.

The preceding remarks mostly have reference to horizontal-trained trees, but the same treatment can be employed for bush, pyramid, standard, or any other form that has to be subjected to spur-pruning. As to trees that have not been kept pruned, I will give one instance of renovation out of many: Some large Blenheim Orange Apple trees, said to date from the first introduction of that noble variety, had grown with a clean stem of 2 feet high, and had then been allowed to spread out their branches without interference. This had been going on for years. Being in a soil and situation well suited for fruit trees they had grown as only the Blenheim Orange can grow, but produced little fruit for their size. At length the garden had to be re-arranged, and these trees, being in the middle of it, were quite out of place. To grub them up was not to be thought of; to head-down such vigorous trees was also voted impracticable. What, then, was to be done? Just this: Take a chisel with a long handle and mallet, and remove all the extended straggling branches, which are the proper parts to attack—not those near the stem, the removal of which causes ugly wounds. The heads were thus brought into something like uniformity in shape, light and air admitted to the middle of the tree; and the result was that all the smaller branches studded with weak bloom-buds were thrown into a state of high productiveness. Meanwhile the garden was trenched three spades deep, and all straggling roots judiciously shortened, not as we have lately read—viz., by taking out a trench 2 or 3 feet from the stem, with an axe rudely demolishing all roots even if as thick as one's leg, then filling-in the hole with dung, &c. No: If this is the only practicable method that can be adopted to renovate, it is best at once to replace with young trees. Bear in mind, the soil was well suited for fruit-culture, being a marly loam 3 feet deep on an open subsoil of a gravelly nature, formation volcanic, aspect south. If it had been otherwise, no doubt it would have been necessary to have mined under the trees, to cut off any roots going down into subsoil.

A tree in a weak or exhausted condition requires different treatment. It is well to reduce the head considerably, and then look to the roots, not cutting off those which are sound and healthy, but carefully removing all old exhausted earth, replacing it with new, sound, rich soil. Remember not only to place it within 2 or 3 feet of the stock, but also for as many yards. Here you will fall in with the feeders, which will at once appropriate the food obtained. Do everything to encourage vigorous growth; displace old with young wood; should this become too gross and not fruitful, prune the roots, but with great care. Avoid whenever possible the amputation of large roots or of the branches of large trees; the shock to the system is too severe.—J. T., *Maesgwynne, S. Wales.*

AN OLD TRUEPENNY.—As all kindly notices relative to gardeners are acceptable to your readers, I forward you the epitaph of one copied from a tombstone in the old churchyard of Hunstanton, Norfolk.—G. E. CRICK.

"JOHN RIPPINGALE, a faithful and attached retainer, served for seventy years as gardener during five generations of the L'Estrange family, one of

whom placed this stone to his memory. Died Oct. 11th, 1870. Aged 83. "Their soul shall be as a watered garden, and they shall not sorrow any more at all."

## OBTAINING GERANIUM AND ROSE FLOWERS IN WINTER.

I MUST not complain of my greenhouse, as, having followed your kind advice, it is now a blaze of beauty; but I cut down in the summer about fifty beautiful plants of Geraniums, and scrupulously picked-off every bud, in hopes they would flower profusely all winter, and they do not, except Geranium Perilla, which just gives a few blossoms for bouquets. Why is this? I keep the house at about 65° during the day, and in this weather admit plenty of air, and at 55° at night; sometimes it has been as low as 45°. Do I water them too much? for they make such growth.

I have a *Maréchal Niel* Rose coming into flower in the same house. It is not in a pot, but in the ground; one bud is very large, and at present looks healthy, but I am anxious to know at what temperature to keep the house; for another Rose, *Adam*, planted close to the *Maréchal* three weeks ago, was full of bud, and to my great dismay, although the foliage looks perfectly healthy, every bud became yellow and dropped-off; but as I say, the foliage looks very healthy, and I see other buds are forming. The only reason for this terrible disappointment which I can suggest is, that there is a Strawberry shelf quite at the top, and when these plants are watered the Rose gets more than it likes of the drip.—F. P. G.

[It is rather difficult to advise about Zonal Pelargoniums for winter blooming without seeing the plants or the house in which you grow them. We rather imagine from your account that you have treated them too kindly. It is not a good plan to pick-out all the flowering eyes, as it induces plants to make wood, or rather to grow instead of blooming. We never in our experience find that the Geranium blooms less in consequence of having a sufficient amount of bloom always left on, and if plants are cut-back and repotted in summer it is not a good plan to disbud too much. Of course, specimen plants that have been grown for summer blooming will not bloom again so freely in autumn without a rest and top-dressing. Plants, also, for winter blooming should not be overpotted; and though we are advocates for a sufficiency of water, there should not be too much given so as to encourage overmuch growth. Plenty of light and a good warm dry atmosphere, top-dressing rather than overpotting, seem to be the requisites for winter blooming. Your temperature on the whole is too high, and very likely you are giving moisture for the sake of your other plants. Have you Pearson's Hybrid Nosesays, as Mrs. Lowe, Bayard, Arthur Pearson, Chunder Sen, &c. ? they are by far the best strain we know for winter blooming; also, among Zonals, Vesuvius, Corsair, Jean Sisley, Rev. C. P. Peach, two of which are Mr. Pearson's? Some of his new pinks promise also well for winter pot-plants, as Mrs. Fytche, Confessa Quarto, and Mrs. Musters. An 8-inch pot is quite large enough for plants for winter blooming, and the best plan is to select good plants at bedding-out time, pot them in from 4 to 6-inch pots in June, and give them another shift to 7 and 8-inch pots early in August, stand them out in a sunny warm place in August and September, and bring them in in October. Merely pinch-in to promote even growth. Do not disbud or cut-back too hard.

As *Maréchal Niel* is planted in the ground, and has good buds on it, we do not advise too much temperature, otherwise you excite growth when the roots cannot supply sufficient nourishment. A day temperature from 55° to 60°, and a night one from 45° to 50°, will be quite sufficient. Tea Roses will often drop their buds from want of sufficient light. Light is the most important of all things for winter forcing to enable the plant to fix the carbon, which in dark days is given off as carbonic acid.]

## ROUND-LEAVED BATAVIAN ENDIVE.

I WAS surprised on reading the observations of "W." in last week's JOURNAL OF HORTICULTURE, respecting the above-named Endive. I take no objection to what he says as to its growth being "particularly compact, less leafy than many other Batavian Endives, and consequently more edible in heart and midrib;" but I do object to seeing old things being sent out as new, or with a name other than that under which they may be had at a tithe of the price.

In 1873 I procured a packet for 1s. 6d. of the novelty "Round-

leaved Batavian Endive," and the usual quantity (1 oz.) of Fraser's Improved Broad-leaved, and sowed them both at one time, and adjoining each other. They were grown alike, planted-out when fit, part were blanched on the ground and part in frames, and in all cases adjoining, so that a difference, if any, could be noted. Growing some hundreds of each any difference would have been apparent, but so similar were the two that no one, myself included, could distinguish the least dissimilarity in any stage of growth. As to any superiority of the Round-leaved over Fraser's Improved Broad-leaved, there is none, both being good.—A.

## OLD FRIENDS WITH NEW NAMES.

"New vegetables are scarce, although new names are ever abundant and bewildering," writes Dr. Hogg in his "Year-Book" for 1874—a dictum which, we apprehend, none will be found hardy enough to gainsay. Regrettable as are this abundance and bewilderment in respect of new names too freely conferred on old acquaintances, still more to be regretted are the confusion and errors of nomenclature, and the synonymic obscurity, which go to increase the bulk, but, at the same time, materially decrease the value of seedsmen's catalogues. As the spring issues are now being prepared and fledged for the coming flight, we would impress on their proprietors and compilers the desirability of taking advantage of what has been done up to this, with a view to bring order out of the preceding chaos. They will deserve best who will do most to correct errors of nomenclature, and will dare to let the genuine thing, freed from a rubbishy heap of synonyms and pseudonyms, stand forth upon its merits. Now, for example sake, let us take our national esculent, the Potato. It appears that out of 189 varieties tried in the Chiswick Garden last season only 114 were found to be distinct, 75 being merely synonyms. As many of our readers are now, or soon will be, thinking of purchasing and getting some early Potatoes down, it may be as well they should know, if they go in for "kidneys," that Alma Kidney, Benson's Seedling, Cambridgeshire Kidney, Cave's Seedling, Champion Kidney, Conqueror, Early May, Early Ranelagh, Laing's First Crop, Nonesuch, Nutbrown, Reynard, Stylian's Kidney, Tory, Shepherd's Kidney, and Veitch's Improved Ashleaf are neither more nor less than Kentish Ashleaf. Here are sixteen impostors under assumed names. Why not at once expunge the whole crew from trade lists? Then, again, Derbyshire Pizetaker, Lee's Hammersmith Kidney, Myatt's Prolific, Rivers's Royal Ashleaf, and Sandringham Kidney are only Myatt's Ashleaf. Here is another batch of pretenders which should be sent to the rightabout. Then again, Duckstone, Margoline, Mona's Pride, and Oakleaf are simply the old familiar Ashleaf Kidney. Our good, albeit rather flat, old friend Lapstone has his merits and his honours surreptitiously assumed by the following pretenders—namely, Cobbler's Lapstone, Haigh's Seedling, Headley's Nonpareil, Huntingdon Kidney, Pebble White, Perfection, Rixton Pippin, Ashtop Fluke, and Almond's Yorkshire Hero. The name of the rightful owner suggests strapping these scoundrels from the company and column in which they have too long passed muster.

The Regent is a great favourite in the London market, and, perhaps, deserving of more extended cultivation here than has been hitherto accorded to it. His regency was too successful to remain undisturbed, and we accordingly have Early Oxford, Mitchell's Prolific, Pink-eyed Regent, Rintoul's White Don, Rusty Coat, Rough Jacket, and York Regent traitorously attempting his deposition. Who is it that has not heard of or seen in print the praises of Red-skinned Flourball? Nay, further, the pictorial art has been called into requisition to make us familiar with his rubicund countenance—*terres atque rotundus*. And yet, notwithstanding all this, some have been uncharitable enough to hint (and we must confess our own experiences point to the same conclusion) that at certain periods, and in some soils, at all events, Flourball is a misnomer, and Soapball would be more appropriate. Be this as it may, he is a fine, good-looking fellow, with a very prepossessing appearance—qualities quite sufficient to win a measure of success, and consequently bring forth a bevy of aspirants to outshine him under the names of American Red, Barkshire's Red-skinned Flourball, Boston Red, Improved Red-skinned Flourball, Kentish Red, and Red Peach-blossom. And, gentle reader—shall we tell it?—these half-dozen ingrates are no other than the offspring of the veritable Flourball himself.

We might go on with the list, but the foregoing in the matter

of one esculent is quite enough to show the necessity for wholesome and wholesale excision in the compilation of trade lists, and care on the part of the trade and growers generally not to be hastily caught by glowing descriptions from self-dubbed raisers of so-called new varieties, and by flashy testimonials from their friends. On another occasion we may have a word to say with regard to one or two other of our garden vegetables.—(*Irish Farmers' Gazette*.)

### THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 14.

"DELIVER me from my friends, and I will take care of my enemies," was the remark of a somewhat cynical philosopher, wide-awake to the fact that one has often more to dread from those whose aspect is friendly to appearance than from open opponents. In the pursuit of horticulture it is not always easy to distinguish friends from foes among the insect tribes, and there is a pretty general feeling that insects found crawling or flying in gardens are rather more likely to be nuisances than benefits, and their fate is correspondent to the belief, often by design, sometimes by accident; for, unquestionably, when using freely certain famous "compounds," "insect-destroyers," and so forth, the gardener blends friend and foe in one undistinguished mass. And it is just possible that in some instances the killing of a predatory insect may be attended with the death of so many of its particular parasite that matters are about equally balanced as to results. The march of intelligence is doing much, however, for the gardener, in leading him to regard the insect world in a very different way from what it was viewed by his predecessor, say in the good old times of George III. In the case of the agriculturist the progress is slower; but one hopes by-and-by the few labourers that Mr. Arch and his friends intend to leave us will do some credit to the advanced civilisation of the nineteenth century, unless, indeed, they are over-petted. Meanwhile not only Hodge, but his master, seem slow to renounce ancient prejudices; vainly have I of late appealed against the shooting-down of rooks in these winter months, because of the mischief they are supposed to have done in Turnip fields. A reference to the "grub" as the real enemy of the Turnip crop does not alter the case in the bucolic mind; for it stands thus: Admitted the grub; well, does not the rook, in its searches after the insect, unearth the Turnip, and thus finish-off the destruction commenced by the invisible enemy? Whereas, for the most part, so sagacious are rooks that it will be found they attack those Turnips which would hardly ever come to any good, though they may now and then root-up sound ones; also, I believe the species may be in a great measure exonerated from the accusations brought against it with reference to grass and Potato fields.

Returning to our more immediate subject, I would here note that there are a good many species of the Dipterous order that are of service to us by seizing and devouring other insects of various orders, though they do not diminish our enemies so effectually as do the larvæ of the Syrphidæ and Tachinidæ. Few, if any, of the flies are useful to us in both the larval and winged condition; and the flies, so agile on the wing in summer, and eager in pursuit of their prey, are mostly feeding quietly in the winter on refuse of an animal or vegetable nature, or, in a few instances, on the roots of plants. The transformations of these are as yet imperfectly known, being difficult to observe. The majority of the flies friendly to us belong to the section *Brachycera*—the "short-horns," in fact, which also includes some of the greatest enemies of man and domestic animals. Among the latter the Cleg, the Horse-fly, and the Gad-fly are names of terror, and those belonging to the genus *Tabanus* (fig. 1) are remarkable for strength and fierceness, with lustrous eyes of varied colours. Though these attack cattle (at least, the female insects), it is believed they also make other insects their prey; but are more usually to be seen on the wing in pastures and about woods, and not in gardens. Flies of the genus *Asilus*, some of which are very familiar objects, are common about roadsides, and occasional visitants in gardens; also, like the *Tabani*, exceedingly active and almost as ferocious as are the Dragon-flies; worse in character, possibly, as they are of a cannibal turn.

*Asilus crabroniformis* (fig. 2) is a handsome fly, well clad with hairs of a tawny hue, except on the front of the abdomen, where they are deep black. The wings are also of a golden hue, and gleam in the sunshine when the insect buzzes

over flowers, to which it frequently resorts for various purposes. One object it has is to seize some insect so intent upon honey that it is off its guard, and an *Asilus* may be seen sweeping through the air with a bee in its grasp, being apparently indifferent to the danger of being stung. A variety of insects, however, furnish food to the *Asili*; and these flies also make caterpillars their prey, and as they do not devour their victims, but only suck their juices, one fly may in its lifetime kill many insects. The larvæ of the *Asili* feed under cover, either on decaying roots and stems of plants, or in holes in trees which have been excavated by others. A curious peculiarity possessed by the fly is the three-padded foot, by means of which the hold upon whatever is seized is rendered more tenacious. Recently, at Woolacombe, North Devon, Mr. F. Smith observed a silvery species of *Asilus*, which afterwards proved to be *A. albiceps*, eager in the pursuit of grasshoppers, numerous on the grassy slope where the fly occurred. A species of feeble flight of the genus *Leptis* (*L. scolopacea*) furnishes another example of the three-padded foot to those



Fig. 1.—*Tabanus autumnalis*.\*

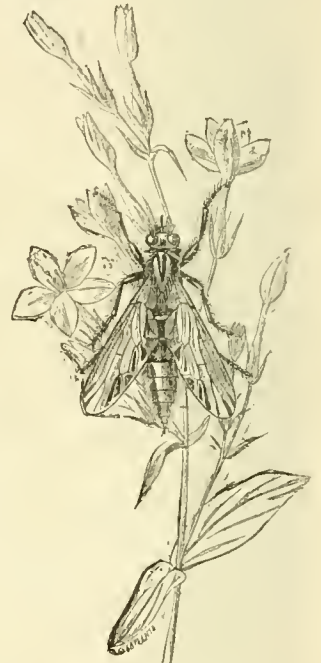


Fig. 2.—*Asilus crabroniformis*.\*

desirous of examining it; this being common in shady spots, as well as in gardens. The thorax is striped, the abdomen spotted in the centre, and the wings edged with grey or brown. The larvæ in this family are little known, only of one foreign species it is stated that it is parasitic in habit, and obtains the small insects it feeds on by constructing pitfalls in sandy earth. This is more notable, because the great bulk of the larvæ of flies (*volgo*, maggots) display very little sagacity, and do not seem capable of much in the way of constructive art beyond the making of a cocoon.

Amongst the Empidæ the same habit prevails as we find in the gnat tribes. The males are harmless, and employ themselves in sucking honey, while the females are predacious. The tongue in these flies is long, and its appearance has led to their being designated Snipe-flies; their legs also are of good length, and serve to embrace the moths and flies which the Empidæ seize and fly along with. *Empis tessellata* is seen through the spring and summer, so that it must either be more long-lived than most flies, or else there must be a succession of broods. In this species the thorax is grey, streaked with black, the legs are spiny, and the wings dusky in hue. The destruction of multitudes of the small moths of the Tortrix family is effected by this and other species of Empidæ, and, as is well known, many of these moths, as parents of leaf-rolling and mining caterpillars, are exceedingly annoying to the gardener. In some seasons it will be observed that these "flies

of prey" are much more abundant and diligent than in other years. Mr. Wood tells us, that he first had his attention attracted to an *Empis* by seeing a number of singular compound creatures flying about in a copse of Oak trees. He says, "A sweep of the net captured four or five, and disclosed the fact that the compound creature was, in fact, a living *Empis*, clasping in its arms the body of an Oak moth which it had killed, and into whose body its long beak was driven. The grasp of the fly was wonderful, and if the creature had been magnified to the human size, it would have afforded the very type of a remorseless, deadly, unyielding gripe." The Green Oak Moth (*Tortrix viridana*), is a species which in the larval state does great damage to the foliage of the Oak, and its multiplication is somewhat checked by the diligence of *E. tessellata*. As we very often discover in Nature, the *Empis*, enemy of moths, is itself attacked by a parasite, by means of which it is kept from increasing to an extent that might lead to the extinction of its favourite prey.

Smaller flies of the same family, though little noticed, do a quiet work for the gardener's benefit in the removal of other



Fig. 3.—*Bombylius major*.\*

Diptera that are amongst his enemies, and also, probably, winged Aphides and Coccis. Such are the *Dolichopidæ*, minute but active flies, as often to be observed running actively over objects as on the wing, and the larvæ of which are presumed to be predatory for the most part. These are abundant. A scarcer insect, near akin to the *Empidæ* proper, is *Rhampomyia pennata*, the male of which has legs deusely covered with flattened scab-like hairs. Both sexes are black; the female's flanks are, however, destitute of this peculiar covering for ornament or defence. Lastly should be mentioned at least the Bee-flies, more common in hot climates than with us, but of which we have some representatives. These could hardly be mistaken for bees by an ignoramus, the contour is so different, and the sound they produce is also unlike the brisk hum of most of the bee race. Though frequent in their visits to flowers, over which they poise themselves and obtain the honey by the help of the proboscis without settling, they now and then, it is suspected, make bold to seize surreptitiously some near or distant relation. The larvæ are in one or two species carnivorous in habit. *Bombylius major* (fig. 3) is a Bee-fly tolerably conspicuous, and if startled it glides away with a rapid movement of the wings, though all the while they are at full stretch and seemingly motionless. This is rather more than half an inch in length, black, and clothed with yellow hairs; round the edge of the wings there runs a waved brown line. We may at once distinguish an *Empis* from a *Bombylius* by the long proboscis being bent down in the former, whereas in the latter it is stretched out in front.—J. R. S. C.

much equality in two stands as to make it difficult to decide, then variety and correct and tasteful setting may justifiably be brought in to decide a doubtful case.—D., Deal.

## ROYAL HORTICULTURAL SOCIETY.

SPECIAL GENERAL MEETING, JANUARY 8TH.

This was called by the Council in conformity with bye-law 50, twelve Fellows of the Society having demanded such a meeting for the purpose of taking into consideration the amendment of the existing bye-laws, by the passing of a new bye-law for enabling all Fellows to vote by proxy at all general meetings of the Society.

Sir A. SLADE, Bart., took the chair, as Viscount Bury, who was to have presided, had not arrived, and said that the Council had received from Mr. Bateman the copy of a resolution which he intended to propose—viz.

"That the Fellows of the Royal Horticultural Society, assembled in general meeting, resolve that all Fellows of the Society ought to have a right to vote by proxy at all general meetings of the Society, and call upon the Council to confirm the bye-law submitted in March last to that effect."

On this the Council held a meeting at which their legal adviser attended, and he was of opinion that as the proposed bye-law had been rejected at the Special General Meeting of March 26th, 1873, the Council had no power to submit it.

After some argument on this point, Mr. BATEMAN, in proposing his resolution, said, that the circulars to which his name was attached had been largely responded to; as many as two-fifths of the debenture-holders (in money), had signified their assent, showing that there was a strong feeling among an influential portion of the Society that its Fellows should have the right of voting by proxy. Here Mr. Bateman cited a number of names of the nobility and horticulturists among his supporters. When he joined, forty years ago, the Society consisted of two classes, the horticulturists *pur sang*, and those who liked the amenities of horticulture, but the situation had entirely changed since the head quarters had been transferred to Kensington—there a new *quartier* had sprung up, of which the inhabitants liked to promenade in the gardens, and in the regulation of the gardens they had already achieved some considerable successes. The preponderance of the Fellows, however, reside in the country, and it was only fitting and proper that these should have the same voice in the management as those near at hand. If the Chairman refused to put the resolution read, he should then propose the following:—

"That the Fellows assembled in general meeting hereby instruct the Council to make forthwith a new bye-law to the following or like effect—viz.: Every Fellow of the Society shall be entitled to appoint, by written proxy (in form marked D), any gentleman being a Fellow of the Society, to vote for him or her at all or any general meetings of the Society, and to submit the same to the Fellows for confirmation at the expiration of a certain number of days, and that this meeting stand adjourned for the purpose of confirming this bye-law."

The original resolution was then moved by Mr. Bateman, and seconded by Lord Alfred Churchill.

Sir COURTIS LINDSAY, Bart., said that the Council were in no way antagonistic to the meeting, but, on the contrary, were desirous to carry out the views of the majority of the members. Still, in consequence of the opinion of their legal adviser they were unable to accept the resolution just proposed. The Council would, however, adopt every means to enable gentlemen to bring forward or pass the resolution at some future meeting. The proposition had been negatived last March, and it would be preposterous for the Council to submit the same subject to a meeting with not one-third of the number present on that occasion.

Lord BURY having arrived, took the chair at this stage of the proceedings.

Lord ALFRED CHURCHILL contended there was no provision in the Charter to prevent a proposition previously negatived being put fifty or a hundred times over, and that voting by proxy was accorded in joint-stock companies. The resolution was not proposed in a hostile spirit to the Council, but that the whole body of Fellows should have the power of passing an opinion on anything that might be submitted to them. They all knew the present Council were at the Board owing to the absence of proxies last year. The incubus was now thrown on his friends and himself of saying the Council were acting as they did to retain their seats. He did not say that was their intention—indeed, he believed it was not; but the matter was one for the opinion of the whole of the Fellows.

Mr. P. LEONARD regretted to find himself at the beginning of 1874 in the same predicament as in 1873, when propositions were made which would have deprived the Fellows of the use of their gardens. On proceeding to remark on some other acts of the old Council, the speaker was recalled to the question by the Chairman, and went on to say that the resolution was part of a scheme emanating from the late Council. First he had a circular signed by Sir Daniel Cooper, imploring Her Majesty's

JUDGING ROSES.—I made one omission, thanks to my friend Mr. Charles Turner for reminding me of it. Where there is so

Commissioners to see the Society out of its difficulties. Then there was Mr. Bateman's circular, and the attempts that were being made to show that the Society was in a state of insolvency, whilst, in point of fact, it would be able to pay 20s. in the pound as soon as the Commissioners paid the balance they owed. He contended that the present Council had extricated the Society from its difficulties.

Mr. H. LIGGINS thought it remarkable that in a Society, now established for fifty [seventy] years, the members had never applied for the privilege of voting by proxy. He would not give the right of voting by proxy; members should hear both sides of a question, and those who were absent did not know all that was going on. The clear object of the gentlemen who got up this movement was to get vote by proxy in order to carry some proposition by which to turn out the present Council. Who signed the requisition for the meeting? Six of the old Council signed it. That showed the object of the movement.

Mr. D. T. FISK was there at the summons of the Council, and he wished the Council would in future get the opinion of their legal adviser before they summoned a general meeting. Why should he have had to travel a hundred miles at the summons of the Council? Every member who lived in the country wished for vote by proxy. They had the advantage of a horticultural press, conducted with great ability, and through it they were always well informed of what was going on in London respecting the Society.

Mr. W. HAUGHTON said the proposition before the meeting was, that male Fellows ought to have the right of voting by proxy. He was opposed to dividing the Society into factions, but was it right that the Kensington minority should rule the three thousand members of the Society? He had looked through the Charter and bye-laws, and could not find in them any rule forbidding a resolution previously negatived being passed. The opinion of the Society's legal adviser, as he took it, meant that the Council of their own mere motion could not bring forward a resolution after it had been negatived at a general meeting.

A FELLOW stated that he had travelled 120 miles to attend, and if the Council knew the resolution could not be put, the country members ought to have been apprised of the fact.

The CHAIRMAN: They are obliged to summon a meeting.

After considerable discussion as to whether the resolution should be submitted to the meeting, the Council having decided not to act in contravention of their legal adviser's opinion, Sir A. SLADE said in answer to Mr. Taylor, the Charter permits the Council alone to make bye-laws. Bye-laws otherwise made have no binding effect upon the Society.

Lord A. CHURCHILL replied that if the resolution were passed it would be an instruction to the Council to make a bye-law.

Mr. C. H. PINCES remarked that he had been at some pains to go over the list of Fellows, and found that those outside the London district were numerically one-fourth of the whole. Half of these—the ladies—could already vote by proxy, and therefore the number for whom that privilege was sought was only one-eighth of the Fellows.

Mr. BATEMAN denied that anything he had done in the matter emanated from the Royal Commissioners. If he thought he was being made a tool by the Royal Commissioners, or by a clique, he should not suffer it. He had been always opposed to the intrigues of the Commissioners. He considered the Society would not be able to maintain its independence without the establishment of vote by proxy.

The CHAIRMAN said the Council had no proposal to make to the meeting. They had not called the meeting, but were compelled to do so through the requisition of twelve Fellows. It pleased these twelve gentlemen, and those who supported them, to say that the Council ought to propose a certain definite course of action to that meeting, but the Council reserved to themselves the right of forming their own opinions as to what ought and what ought not to be proposed; and, in the exercise of that discretion, they did not propose such a resolution as Mr. Bateman had brought forward. Mr. Bateman was indignant because it had been stated he had any connection with the Royal Commissioners; but Mr. Bateman himself had led them into the mistake, because in the list of his supporters he read the names of Dr. Lyon Playfair, a Royal Commissioner, of Mr. Edgar Bowring, a Royal Commissioner, and of Lord A. Churchill, a member of the old Council. Behind Mr. Bateman sat the great Mr. Cole himself, and General Scott, so what were people to think? The Council did not tell the meeting what their opinions on the question of vote by proxy were, they only said they thought this was not the occasion on which the question should be brought forward. Although the meeting might express an opinion on the question, the Council would not interfere with that expression, take any action upon it, or consider themselves bound to follow it. The Council were the heirs of embarrassments left by their predecessors, and if the fundamental mode of voting were changed, that change would only throw additional embarrassment in their way. If a different course of action from that hitherto pursued were preferred by the Fellows, let it be at the Annual General Meeting or some con-

venient time afterwards, when the Council would be prepared with a policy.

Mr. POWNALL moved an amendment that the further consideration of the subject be postponed till after the General Meeting. This having been seconded by Mr. Liggins and lost, the original resolution was put by the Chairman, who remarked, before doing so, that the Council must not be considered as mixing themselves up with the matter at all, but that he put the resolution formally as Chairman to preserve the harmony of the meeting.

Mr. Bateman's resolution having been carried by a show of hands, the meeting concluded.

We are requested to publish the following correspondence on the subject of the meeting above reported:—

"9, Hyde Park Gate, South, W.,  
"9th January, 1874.

"SIR,—As the subjoined resolution\* was yesterday carried (without counting 119 proxies with which I had been entrusted) by a large majority, I cannot but regret that the Council on merely technical grounds should have declined to produce the "bye-law" therein referred to, and so give immediate effect to the wishes of the Fellows.

"But as it is most undesirable that the matter should be left in its present uncertainty, I have to request, on behalf of the Fellows with whom I am co-operating, that you will kindly inform me, on or before the 16th inst., whether the Council are prepared to loyally accept the decision of the Fellows, and take immediately the requisite steps for the passing of a bye-law so as to enable the Fellows to vote by proxy at the next Annual General Meeting of the Society.—I have the honour to be, Sir, your obedient servant,

"(Signed), JAMES BATEMAN."

"The Secretary of the Royal Horticultural Society."

"Royal Horticultural Society, South Kensington, S.W.,  
"14th January, 1874.

"SIR,—In answer to your letter of the 9th inst., inquiring whether the Council of the Royal Horticultural Society are prepared to introduce the system of proxy-voting at the General Meetings of the Society in consequence of the opinion expressed by the Special General Meeting held on the 8th inst., I am directed to say that the Council, while considering that it will be their duty to carry out the wishes of the Fellows on this point as soon as those wishes shall have been finally expressed, cannot look upon that meeting as having conclusively settled the matter.

"It appears to the Council that the innovation proposed is so grave that they would fail in their duty towards the Society if they were at once to concur in the policy adopted by the majority at that meeting.

"I desire to remind you that the meeting of the 8th inst. was promoted solely by yourself and your friends, without any corresponding interest shown by those opposed to you; also that the meeting, even when promoted by so much diligence, was, as compared with the meeting which rejected proxy-voting last April, poorly attended.

"In conclusion, I have to state on behalf of the Council that they will give this subject very careful consideration, and will call another meeting specially to decide upon it when the largest portion of the Fellows are in town, and can attend to express their views.

"The Council intend to publish this correspondence.—I have the honour to be, Sir, your obedient servant,

"(Signed), W. A. LINDSAY, Secretary."

"James Bateman, Esq., F.R.S."

## PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

*SAXIFRAGA PELTATA*. *Nat. ord.*, Saxifragaceæ. *Linn.*, Decandria Digynia.—Native of California. Flowers white, tinged with pink. "Variable as the foliage of the Saxifragas is, the present is the only one known in which that organ is completely peltate, and like many other peltate-leaved marsh and water-loving plants, this is stated to be found on the margins of streams and in the water itself."—(*Bot. Mag.*, t. 6074.)

*XANTHORRHEA QUADRANGULATA*. *Nat. ord.*, Juncæ. *Linn.*, Hexandria Monogynia.—"It is a native of South Australia, where it inhabits rocky hill ranges, and was sent to Kew by Dr. Schomburgk, the energetic Director of the Adelaide Botanic Garden. Shortly after its arrival the trunk, which is 4 feet high, slowly developed its fresh green leaves, which

\* The Fellows of the Royal Horticultural Society assembled in General Meeting resolve that all Fellows of the Society ought to have the right of voting by proxy at all General Meetings of the Society, and they call upon the Council to submit to them for confirmation the bye-law made by the Council in March last, enabling all Fellows so to vote.

steadily increased in number and length till the plant had the appearance given in the plate; the flower stem and Typhalike spike commenced to emerge about July of last year, and attained its full development in September, when the flowers began to expand from below upwards, and a full month elapsed before all had opened. During flowering time a copious honey-like secretion was exuded, which hung in great tear-like drops to the brown spike."—(*Ibid.*, t. 6075.)

*CORNICUM SPECIOSUM.* *Nat. ord.*, Melanthaceae. *Lin.*, *Hexandria Trigynia.*—Native of the Caucasus. Flowers reddish purple. "The largest known species of the genus, and a very handsome one, a native of the countries bordering the Caucasus range on the south, and extending thence into Persia, it, as appears to be the case, a Ghilan plant of Ancher Eloi (n. 5370) is the same species. Ledebour in his 'Flora Rossica,' says that it inhabits the provinces of Mingrelia, Iberia, the Suwant, Lenkoran, and the south-west shores of the Caspian Sea. It has been for some time known to amateurs in England, though not hitherto figured in any English work. *C. speciosum* has been cultivated for many years in Kew, but the specimen here figured, which is much more deeply coloured than the Kew one, was sent by Messrs. Barr & Sugden, who have a fine collection of the species of this beautiful genus."—(*Ibid.*, t. 6078.)

### NOTES AND GLEANINGS.

DR. E. REGEI, Director of the Botanical Gardens, St. Petersburg, has published a work on the SPECIES OF VINES met with in North America, Northern China, and Japan, in which he discusses the long-controverted question of the origin of the Vine. According to him, the cultivated Vine, which forms our vineyards and produces our wines, is not a distinct and separate botanic species: it is a hybrid of two species belonging equally to the genus Vine—viz., *V. Labrusca*, L., and *V. Vulpina*, L. The former of these two species is met with in a wild state in Northern America, in Japan, in Manchuria, and in the Himalayas. Its leaves have their inferior face covered abundantly with a cotton-like down. The second species, which grows naturally in the same countries, has upon the inferior face of its leaves only small hairs, short and very stiff, upon the nerves. The first of these two species has furnished the two most remarkable varieties of American Vines—the Catawba, much cultivated for the production of wine, and the Isabella, the grape of which, sought after for the table, has a perfumed flavour and peculiar odour, agreeable to some, but disagreeable to others.

—THE FINEST KITCHEN GARDEN in France is that of VERSAILLES, which belongs to the State, and brings in a yearly revenue, taking good and bad years together, of about 20,000 francs. The Assembly has determined to apply this valuable property to the formation of a model market garden and school of horticulture. The details of the institution are not yet arranged, but it is presumed that it will be self-supporting, and that it will render valuable assistance in the development of horticultural science in France.—(*Nature.*)

—THE CONSUMPTION OF IMPORTED POTATOES must be very large. The declared value imported in the last twelve months was £2,121,235; in the preceding year, £1,654,240.

### NOTES ON VILLA AND SUBURBAN GARDENING.

NOSEGAYS AND CUT FLOWERS.—Though these are very acceptable to most persons, there are few who rightly understand the art of keeping them long in a fresh state, or reviving them when they have faded. It is true that when a flower or branch is cut off from its parent plant its support is thereby destroyed, but still some flowers may be kept in great beauty for a much longer period than others, and many for a far longer time than is generally done, or even supposed possible. For this purpose flowers should be gathered early in the morning, but not till the dew be nearly dried off them. They should be placed in a flat basket or on a tray so as not to press upon and crush each other, and they should be neatly cut, and not mangled or bruised. When thus gathered they should be covered with a sheet of paper and immediately conveyed to the apartment where they are to be used (Messrs. Dick Radclyffe & Co.'s would be a neat and handsome bouquet-holder for the purpose). But if they are to be sent to any distance they should be placed in tin cases, such as botanists use when collecting specimens. In this way the Dutch florists send specimens of their finest flowers, not only to England, but to more distant parts of continental Europe. Our own florists send to the metropolis, for competition at ex-

hibitions, flowers from Cornwall, from the north of England, and from Scotland, and they arrive without the least decay. They are placed in wooden or tin boxes having an internal arrangement of small phials fixed under a covering of tin just large enough to admit the stalks of the flowers, the ends of which are placed in the water of the phials, and in this way they are conveyed with perfect safety.

Flowers should not be cut during sunshine, or kept exposed to the solar influence, neither should they be collected in large bundles and tied tightly together, as this invariably hastens their decay. When in the room where they are to remain, the ends of the stalks should be cut clean across with a very sharp knife (never with scissors), by which means the tubes through which they draw the water are left open, so that the water ascends freely; this it will not do if the tubers of the stems are bruised or lacerated. A thin slice should be cleanly cut off from the end of each stalk every time the water is removed, which will occasion fresh action and revive the flowers. Water about milkwarm or containing a small quantity of camphor will sometimes revive decayed flowers. The best method of applying this is to have the camphor dissolved in spirits of wine, for which the common camphorated spirits of the druggists' shops will be quite sufficient, and add a drop or two of this for every half-ounce of water. A glass shade is also useful in preserving flowers; and cut flowers ought always to be shaded during the night, and, indeed, at all times when they are not purposely exhibited. The following are some of the genera of plants, the flowers of which remain the longest after being cut—*Gnaphalium*, *Astelma*, *Helichrysum*, *Phacocoma*, *Aphelexis*; and others which the French have designated "immortal flowers," from remaining unchanged by decay, hold the first rank.

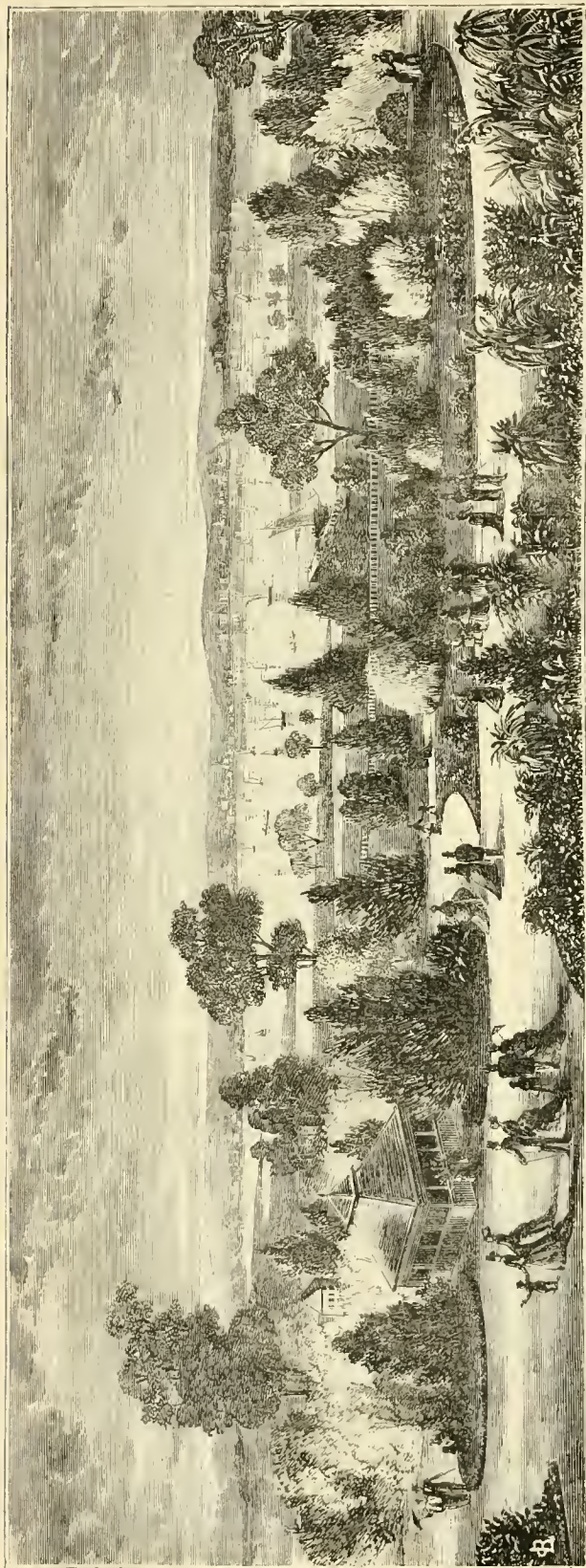
ROCKERIES.—For ordinary purposes, the materials of which a rockery, however small, is formed should lie on their broadest or flat sides, and not be set on edge, much less be placed with their points upwards. Little deviations may occasionally be allowed for variety, but the mass will have more appearance of solidity and strength, and be more accordant with Nature's teaching if each piece be laid flat with the outward edge tending a little downwards rather than upwards. Any great elevation should never be sought in small rockeries. This would be inconsistent with their breadth, and would render them too prominent and artificial. They should not be carried higher than the point at which they can be well supported, and backed with a broad mass of earth and vegetation. To grow Ferns upon them the shade of trees or some other objects will be indispensable; but many rock plants prefer an open sunny situation, so that rockeries should not be entirely shaded. *Cerastium Bibersteinii*, with its white leaves and whiter flowers, and procumbent habit of growth, is admirably adapted either planted in a recess or suspended gracefully over the front of some stone. *Arabis procumbens* is also a beautiful plant for a like purpose. *Aubrietia purpurea grandiflora* is a charming purple spring plant. Mr. D. Thompson's interesting paper containing most useful hints on alpine plants for spring bedding, and Mr. G. F. Wilson's list, are well worthy of notice for rockeries. Plants with trailing habit, evergreens, and a few of the less delicately-branched weeping kinds, and those which assume a wild, rugged, and picturesque character, are most suitable for rockeries.

As neatness should always be a leading feature in the villa or suburban garden, everything that can be done to promote this should be forwarded now, when little else can be performed. Anything that appears unsightly and that will make manure should be removed to the rot-heap, which should be turned over occasionally and covered with a little soil. This prevents all noxious effluvia from escaping; the soil also mixes among the decaying vegetables and becomes excellent compost. Soap-suds have a good effect on many kinds of vegetables, and should not be thrown away; they act beneficially on soils where Cabbages are infested with the club, and in some instances have been known to entirely cure that disease.

VEGETABLES.—A sowing of Radishes may be made on a warm border, but they must be protected from frost by covering the bed with straw. If any digging or trenching yet remains to be done, no time should be lost in getting it forwarded while the weather will permit.

FRUIT.—In planting Gooseberry and Currant trees care must be taken to thin them well out in the centre, so as to admit plenty of sun and air. The same remark is also applicable to standard Apple trees: the middle of the trees must be kept quite open, taking care that all the branches lead outwards, and preserve a regular distance from each other. Pear trees should also be well thinned, and the produce will be much better in quality.

FLOWERS.—Pelargoniums, Fuchsias, &c., in pots should have as much light and air as possible; they should be sparingly watered, and this ought always to be done in the morning. If they are inclined to grow up tall and slender, the points of the shoots may be pinched off with the finger and thumb, and this will induce them to throw out side branches, and make them dwarf and bushy. Anything that is likely to be injured by



frost should be carefully watched and protected from it by straw or fern.—W. KEANE.

### THE BALLARAT BOTANICAL GARDEN.

ENGLISHMEN and their descendants, and consequently the productions of England, are gradually predominating over the world. We have an overflowing because a prosperous community, and the overflow goes on to distant lands, and establishes there the language, the industrious habits, and the vegetable and animal produce of their native land. They cling lovingly to these, for they emigrate, not because they cease to love their native land, but because they can thrive and advance their offspring better in the home of their adoption. This is shown by all that they write about, and by their revisiting, "the old home;" and we do not fear to be thought insular when we write that our eyes are dimmed when we remember the boat alongside the emigrant ship, and the two larks in an old stocking handed-up as a parting gift to be naturalised and remind of home in the land across the Atlantic.

This last-written word reminds us why we now took up our pen. We have had sent to us, and we have had engraved to place before our readers, a corner of the Botanical Garden at Ballarat. Twenty years ago the place had no existence. Ballarat is the earliest of the large gold-diggings in Victoria, and is about one hundred miles from Melbourne. The digging commenced in the September of 1851, and in a few months within the space of a square mile seven thousand adventurers were congregated. It is now populous. Nearly four thousand acres of Vines are cultivated, and the produce of wine large. The Botanical Gardens are on the western side of Lake Wendouree, and are thus noticed by one of the local newspapers—"The lake, formerly called the Wendouree Swamp, is one of the places of recreation of Ballarat. It was formerly overgrown with rushes, but by means of a steamer provided with a cutting apparatus a wide and long sheet of water has been cleared for boat races. The assistance of the Government has been asked in clearing the entire basin of weeds. The lake is the head-quarters of the Ballarat rowing and yachtsmen. On its surface are therefore to be seen gigs, out-riggers, and smart sailing crafts. At the eastern end are the boat-houses and landing-stages. On the western extremity of the lake are situated the Botanical Gardens, the taste in which they are laid out and the good order in which they are kept doing credit to the metropolitan gold field. A carriage drive runs round the gardens. Pedestrians can wander amidst shrubberies or feast their eyes on beds rich in flowers, or they can explore the mysteries of the labyrinth, in the middle of which stands the look-out tower. From the top of this building a good view of the surrounding country is obtainable. Our engraving represents the lake in the background, while in the foreground is a reserve, forming portion of the Botanical Gardens. The sward to the right, sheltered by a screen of hushes, is a favourite spot for picnics, and is in summer well patronised."

We know that the Society are anxious to receive contributions of plants from all our European botanical societies; and none need fear that they are sending hardy plants to an ungenial climate, for we know, from the report of the Victoria Horticultural Society, that it has the following collection of fruits, and that those which have been proved equal in production to those grown in Europe:—

389 Apples, of which .....	160	have been proved.
261 Pears " .....	33	"
33 Peaches " .....	18	"
8 Nectarines " .....	4	"
80 Cherries " .....	39	"
84 Plums " .....	43	"
38 Apricots " .....	28	"
136 Grapes " .....	81	"
34 Oranges (and others of the Citrus family).		
32 Figs, of which .....	6	have been proved.
32 Strawberries, of which ..	26	"

and collections of other less important fruits.

We have not any recent reports as to the growth of other members of the vegetable kingdom at Victoria, but we have the following from the Proceedings of the Wellington Philosophical Society, and this New Zealand neighbour is little to the south of Victoria:—

"ST. JOHN'S NURSERY GARDEN, WANGAUNI, NEW ZEALAND.—This garden is situated at about five chains from the foot of St. John's Bush, a wooded cliff some 90 feet in height, bounding the town of Wangauni on the north-west. The garden is, from its situation, exposed to almost the whole of the sun's warmth,

and is also completely sheltered by the cliff from the prevailing wind—the north-west. Besides this natural protection, the north-western boundary of the garden is screened by a Hawthorn hedge extending along its whole length, and averaging in height about 28 feet. Behind the hedge is a running stream, the percolation from the Virginian Lake, by which the whole of the garden can be irrigated. The spot on which the nursery is laid out was formerly the old bed of the Wanganni River, and subsequently an ancient forest. On the surface, therefore, is an average of from 3 to 4 feet, in many places deepening to 6 feet, of decayed vegetable matter, while the subsoil is a rich alluvial deposit. Its extent is five acres, of which about two and a half are orchard, one devoted to nursery stock, and the remainder to specimen trees and shrubs."

The following table will give some idea of the luxuriant growth of the plants in this garden:—

Age from nursery stock.	NAMES.	Height.	Spread of branches.	Trunk at base.
		Ft. In.	Ft. In.	Ft. In.
3	Cupressus Govenians	17 0	14 0	2 1½
3	torulosa	7 8	7 0	1 4
3	Lawsonii	9 1	8 0	2 0
3	Benthamii	19 3	20 0	2 11½
3	pendula	7 0	6 0	0 7½
3	Knightii	7 9	6 0	0 6
3	sempervirens stricta	15 0	3 6	1 1
4	macrocarpa	24 10	22 6	3 1
3	ditto (denser in habit)	18 4	20 6	2 10
3	Corneyana	9 2	12 0	1 0
3	Schubertii (from seed)	4 6	4 6	0 4½
3	sempervirens	9 0	8 0	0 10½
3	Craigiana	10 0	10 0	1 0
5	Oyster Bay Pine	11 0	14 0	1 9
3	Cryptomeria Lobblii	15 0	8 6	1 6
2	elegans	7 6	6 0	0 9
3	Pinus insignis	22 0	10 6	3 0
4	sylvestris	11 6	10 0	1 10
3	casariensis	11 0	4 0	1 4
3	maritima (from seed)	10 6	9 0	1 2½
3	anastrica	8 9	7 0	1 4
3	Strobilus	5 9	6 0	0 9
3	Conlteri	8 6	7 6	1 5
3	longifolia	4 9	4 0	1 1
3	Biota aurea	3 6	3 6	1 8
3	Cedrus Deodara	8 0	7 0	0 11
3	atlantica	6 0	6 0	0 8½
3	Arancaria imbricata	4 1½	4 0	0 6
3	Bidwillii	4 6	5 6	0 6
3	Wellingtonia gigantea	12 8	8 0	2 7
3	ditto (last year's growth)	6 8	—	0 8½
5	Taxus baccata	8 4	8 0	1 6
3	Quercus Ilex	14 6	8 0	1 2
5	Robur (from seed)	17 6	10 0	1 5
4	Magnolia grandiflora	12 0	12 0	1 0
3	Betula alba (from seed)	20 0	16 0	2 0
3	Arbutus	12 4	10 0	1 11½
3	Laurustinus (hedge)	8 0	6 base of hedge	—
4	Laurus nobilis	12 0	6 0	1 10
3	Taxodium sempervirens	9 0	9 10	1 1
3	Fraxinus excelsior (from seed)	10 3	—	0 7
3	Abies excelsa	8 4	—	0 11
3	Crataegus crus-galli	9 0	6 0	—
3	Juniperus Oxycedrus	6 0	8 0	1 0

## DOINGS OF THE LAST AND PRESENT WEEKS.

### KITCHEN GARDEN.

The continued fine weather has allowed us to forward all digging and trenching operations; and where this work is finished, so that little or no heavy traffic will require to pass over the walks, the Box edging has been cut and the walks freshly gravelled. We would rather do both operations late in the spring; but if this and similar work were delayed until the most amiable time, in all probability it would not be done at all. There is little to be said about the minor details of such work. Many persons like to have the Box edgings wide, but they are not only neater if they are kept narrow and dwarf in this department, but wide edgings are a sure refuge for slugs and other pests. If there are a number of gaps in the edging arising from unsuitable soil or other circumstances, causing an unsightly appearance, it is better to lift the whole and relay it. There may not be time to do the whole garden, but a part may be done one year and the rest when convenient. In applying the gravel see that all weeds are removed, and the old gravel stirred up with a fork to the depth of an inch or two. The walks should be left a little higher in the centre than they are at the sides—just enough to throw off the rains. If too high in the centre it is very uncomfortable to walk upon them, and there is no reason why it should be so.

Made a sowing of Windsor Beans on a south border, and sowed Hicks's Hardy White Cos Lettuces, Early Horn Carrot, and French Breakfast Radish under ground vineries. These vineries

are 3 feet 6 inches wide at the base, such as have been recommended by Mr. Rivers for growing Grapes. There is room for four rows of Carrots or Lettuce in each length, and the Radishes are sown between the rows, to be removed before the other crops are sufficiently advanced to be injured by them. Of course it would be bad policy to sow such seeds in ordinary garden soil. A reserve of dry loam is always at hand, and as this was rather lumpy it was passed through a gravel sieve, the rough portion being available for potting purposes; this was spread over the surface of the seed bed to the depth of 3 inches and the seeds sown in shallow drills.

A sowing of Cauliflower seeds may be made under any glass protection. Our Cauliflower plants under hand-lights were late this year, but they are growing well, and will not have so much tendency to button as larger plants would. It is always advantageous to the plants to dress the surface of the ground outside the hand-lights with rotted manure, as, should a severe frost set in, the manure prevents it from penetrating the ground, and thus saves the plants. Stirring the surface of the soil round the plants with a small fork or pointed stick is advantageous.

### FRUIT AND FORCING HOUSES.

*Pine Apples* which were in their fruiting pots by August, and have been at rest from the first week in November, should now be started. It will probably be necessary to renew the beds with fresh tan, and herein is danger of an excess of bottom heat. If tan remains too long in Pine beds, it decays into fine powder, becoming a harbour for worms. Opportunity may now be had to sift it, reserving the rough portion to mix with fresh tan from the yards. This will at first heat violently; in many instances the temperature of the bed will be as high as 120° Fahrenheit's thermometer—a sufficiently high medium to destroy the roots of the plants if they were plunged in it. It is generally best to place the pots on the surface of the bed, and at the end of ten days, or more, the heat will have declined, so that the pots may be plunged; 85° or 90° will be quite high enough for the roots. As it is desirable to make the plants throw-up fruit before they start into growth, this will be best accomplished by keeping them comparatively dry at the roots. Those which start into growth may throw-up fruit two months after the others, and some of them later still. A mode of treatment recommended by the best growers, and tried here with only moderate success, is to cut such defaulters over at the surface of the soil in the pot, repotting firmly in a 9 or 10-inch pot in the same way that suckers are managed. The earliest fruit from a batch of Queens started now would be ripe about the middle of June, but the night temperature should be 70°, except in very severe weather, when it may fall 5° lower.

*Cucumber House*.—Attend well to bearing plants. Now is the most trying period to obtain a supply. Much, indeed all, depends upon the variety, and the formation of the house. A true stock of Telegraph is a certain bearer in winter. The houses should have a steep pitch and face south. There should be a sufficient quantity of hot-water pipes to raise the temperature to 65° or 70°, even in a severe frost, without overheating the pipes. Plants that have been in bearing for the last two or three months should have the surface mould removed without damaging the roots, and have a dressing of rich manure, mixed with turfy loam, applied to the surface. Glass and woodwork should be perfectly clean, decaying leaves be removed at once, thrips and green fly to have no place. Water when necessary with tepid water, giving a thorough soaking to reach the bottom roots.

*Melons*.—We made the first sowing on the 8th; Scarlet Gem and Hybrid Cashmere used to be our favourites. The last must certainly give place to Victory of Bath, a good selection of which has been brought into notice within the last few years by Mr. Gilbert, gardener to the Marquis of Exeter; and Read's Scarlet-fleshed Melon, a variety being sent out this year for the first time, will, if it maintain its character, displace all other scarlet-fleshed sorts. We are trying it against Scarlet Gem, and shall in due course state the results. It is best to sow the seeds in 5-inch pots in good loam, with a very small portion of leaf mould and sand, placing the pots in bottom heat, and as soon as the seed-leaves are fully developed the plants may be potted singly in the same sized pot, and they will make the dwarfest and most hardy plants if they are grown on shelves placed near the glass.

Removed a lot of *Sea-kale* and *Rhubarb* to the forcing houses, the *Sea-kale* treated as previously recommended. The *Rhubarb* roots are placed crowns uppermost in the bottom of flour-tubs, sufficient damp loam is placed round the roots so as not to quite cover the crowns, the tubs are placed in the early vinery or any forcing house, a covering of some sort is put over the tubs, and no water is applied to the roots until the first dish is gathered.

*Dwarf Kidney Beans* in a bearing condition in pots should be supplied with weak manure water, and freely syringed early in the forenoon. They must be kept free from red spider, and if this is done they will continue in bearing for a long period.

*Orchard House*.—The Peach and Nectarine trees have been

removed inside from the bed of cocoa-nut fibre refuse, in which they have been plunged out of doors since the first week of October. The young rootlets are ramifying freely into the surface loam which was added when the plants were repotted. Every plant of them was repotted when in full leaf in September, except the late sorts, which could not be potted until the fruit was gathered. Surface-dressing the pots is well enough if one could be sure the drainage was not defective, but if this is stopped from any cause surface-dressing will do harm instead of good. The trees are abundantly furnished with blossom buds, which are in a forward state. The house is aired freely by day, and shut-up closely at night. No frost is admitted. A fire is put on if the glass threatens to fall many degrees below the freezing point. We do not like the soil frozen in the Strawberry pots on shelves near the glass.

#### STOVE AND GREENHOUSE.

There are very few subjects in flower in the stove at present, except Orchids; but there are now so many handsome-leaved plants that the want of flowers is not so much felt; and there is in most places such a demand for cut flowers for drawing-room, dining-room, and other decorative purposes, that there is little chance to keep the houses gay. For instance, there are Orchid flowers which will continue in perfection for three months if left on the plant, but the gardener finds it necessary to cut them for the house, where their beauty is gone in a week. Of course gentlemen must take account of this when their hothouses show a paucity of flower. Still continue to keep a vigilant look-out for all insect pests. Amaryllis bulbs in one of the late vineries are starting into growth, and some of them are showing flower. They will be removed to a house where the night temperature is about 55°, and if the pots can be plunged in a gentle bottom heat the plants will grow much stronger. They have been kept without any water for more than two months. The mould in the pots will be thoroughly saturated at first; water will afterwards be applied as the pots require it.

The temperature in the greenhouse or conservatory must not fall too low now, as plants are being introduced from the forcing house. Some of them, if they receive a check at first, fail to open their flowers. Hyacinths, Lily of the Valley, or indeed nearly all flowering plants which have been brought to the flowering stage in heat, should be removed to the show house as soon as the first flowers open; they will not last long if allowed to open in heat. Care must be taken not to expose them to cutting winds from the side ventilators. The good old-fashioned *Fuchsia* is not very carefully cultivated in fashionable establishments now; but those who still appreciate this old favourite will at present be looking-up their old specimen plants which have been stowed away in a corner of some cool house where frost could not reach them. The pots ought to be quite dry, or at least sufficiently so that on pruning or cutting the old wood in pretty close to the main stems the cuts will not bleed. Leave the plants for a week or so after they are pruned, water the pots, and remove into heat afterwards.

Pruned the main collection of pot Roses. The buds were breaking freely all over the plants, which showed that root-action was healthy.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

David Gold McKay, Sudbury, Suffolk.—*List of Vegetable and Flower Seeds.—List of Gladioli and other Flower Roots.*

James Betteridge, Common Hill Nursery, Chipping Norton.—*Abridged Catalogue of New and Choice Potatoes, and Hardy Herbaceous Perennials.*

Dick Radclyffe & Co., 129, High Holborn, London, W.C.—*Catalogue of Seeds, Garden Tools, Horticultural Decorations, &c.*

#### TO CORRESPONDENTS.

\*. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

CYCLAMEN (A. R.).—The flower is very slightly abnormal, and will not be permanent, we think.

STANDARD ROSES (W.).—We cannot recommend standard Roses for an exposed windy situation, as no Roses really can succeed as standards in such

a position, but twelve of the best and most hardy sorts are:—Alfred Colomb, Charles Lefebvre, John Hopper, General Jacqueminot, Comtesse Ceile de Chahillant, Abel Grand, Dr. Andry, Boule de Neige, Baroess Rothschild, Victor Verdier, Fisher Holmes, and Marcella Vaillant. We advise planting them as pillars on Manetti stocks, and carefully training them. No plants suffer more from wind than Roses.

WORMS IN POTTING SOIL (*An Inquirer*).—The portion of soil sent was found to be infested with four different kinds of worm-like animals of a white colour. Many were of a minute species of true worms. Several with very small black heads were the larvae of a gnat, and others the larvae of some of the Muscicoid flies. Water the soil well with lime water, if the plants will bear lime.—I. O. W.

ELECTION OF ROSES (S. Eyre).—At the Rose election in the autumn of 1873, the following were the first twelve:—Charles Lefebvre, Marcella Niel, Alfred Colomb, and Mad. Rothschild (equal votes), John Hopper, La France, Marie Lammon, Comtesse d'Oxford, Marquis de Castellane, Senteur Vaisse, Pierre Notting, and Duke of Edinburgh. At the election of new Roses last year the best twelve were:—Comtesse d'Oxford, Etienne Levet, Marquis de Castellane, Louis Van Houtte, Mlle. Eugénie Verdier, François Michelon, Ferdinand de Lesseps, Madame G. Schwartz, Catherine Mermet, Paul Neron, President Thiers, and Annie Laxton.

PRIMULA AURICULA (*Inquirer*).—The species, native of Switzerland, has yellow flowers, and so have two of its varieties occurring there, *Primula Auricula lutea* and *P. A. calycantha*. A third variety, also native of Switzerland, *P. A. integerrima*, has flowers of various colours. It is probable that all these ministered to the production of our garden varieties. As long ago as 1847 we published the following notes on this flower:—"The Auricula is described and figured by Gerard in his *Herbal*, which appeared in 1597, and it is there called the Bear's-car or Mountain Cowslip. He says there were then many sorts, giving drawings of eight, the yellow, the purple, the scarlet, the bluish-coloured, and several reds. Like Bauhin, he gives them the specific botanical name of *Auricula Ursi*; but by Matthioli and others it was named *Sanicula alpina*, from its supposed healing virtues and mountain birthplace. It was often called by ladies the French Cowslip. It is very certain that they were thus early much cultivated by French florists, for there is a poem in their praise, in a curious work published at Douay in 1616, entitled "*Jardin d'Hyver*," and with the verses are numerous drawings of the Auriculas, or "*d'Oreilles d'Ours*," as they are there called. Gesner named it *Lucaria anthracia* and *Paralytica alpina*. Parkinson says it obviously belonged to the Cowslip family, but Ludwig was the first to arrange it there under the generic name of *Primula*. Gerard says that the eight kinds he enumerated were then commonly grown in the gardens about London, but it is evident they were not much esteemed; nor is any notice taken of raising varieties from seed. This neglect soon passed away, for Johnson, in his edition of Gerard, published in 1633, says that there were then a very great many varieties of these flowers growing in the gardens of Mr. Tradescant and Mr. Tuggie. Tradescant's garden was at Lambeth, and he, at the time Johnson wrote, was gardener to Charles I.

SANTOLINA INCANA (*Highfield*).—You must procure plants. Any of the nurserymen who make bedding plants a speciality can supply it, such as Cannell, of Woolwich, or Henderson, of St. John's Wood. Failing a full supply of it for this season, use *Cerastium tomentosum*, which forms an admirable substitute. To the query concerning the size of your garden, we answer, No.

RIBSTON PIPPIN (*Manchester*).—We do not consider grafting deteriorates this Apple. The parent tree at Ribston Hall, near Knaresborough, died long since, but young trees were raised from it. From the following account you will see that they are not so vigorous as was their parent:—"In the park once stood the original Ribston Pippin tree. This was raised from pips, sent home from Rouen in 1709 by Sir Harry Goodrick, Bart. The trunk of the original tree was blown down and removed many years ago; but a portion of it may now be seen outside the gardener's house, where it is taken great care of by Mr. Jones, the gardener. A sucker from the original tree now occupies the place of the latter. It does not grow well; indeed, owing to some of the branches dying off annually, it is now much less in size than when I first saw it some seventeen years ago. The branches have died off very much since the frost of December, 1869. It throws-up suckers freely, so that should the present tree be lost, one of them would soon make a nice tree with attention."—(*Florist and Pomologist*, 1866, page 245.)

SEEDLING PEACH TREE (*Mrs. M. S.*).—It will bear without being grafted or budded on another stock; but if grafted on a bearing tree the growth from that bud would probably bear fruit earlier than the maiden tree. We had a maiden Peach tree trained as an espalier that bore when four years old.

PEAR TREES UNFRUITFUL (*I. R. P.*).—The state of your fruit trees cannot be accounted for in any other way than the soil being unsuitable, or your garden not being efficiently drained. If the drainage is good lift the trees carefully at once (it would have been better to have done so in November), trench the ground at least 2 feet deep, and replant, placing decayed turfy loam or some good soil round the roots.

DEAD ANIMALS FOR VINES (*Idem*).—The reason why fresh animal matter is not applied to Vine borders is, that any roots coming in contact with the carcasses would be killed. One or two buried in a border or at the roots of fruit trees would not do any appreciable harm; and in the course of years, when the organic matter had returned to its original dust, the roots would derive sustenance from it. The Vine borders at Raby Castle many years ago were made with a large quantity of animal matter intermixed, and the Vines refused to grow. Trentham Black Grape succeeds well in a ground viney, but we would not plant Gros Colman in such a structure.

HORSE CHESTNUT GRAFTING (*C. E.*).—We think your previous failure was due to the manner of putting on the grafts, which was probably the ordinary crown method. We advise you to proceed as before, and to graft on the side instead of the strong main branches by the mode known as tongue or whip-grafting. Leave a foot or so of the main branches beyond the smaller branches on which you insert the grafts, and after the latter have taken cut this away close to the smaller branches on which the grafts are situated. A better plan would be to allow one or two strong shoots to start from each, and bud these as soon as the buds at the points of the shoots were formed, or after the middle of July, taking a good bud from the second or third joint with its leaf, and reducing it about one-half. The buds succeed better than grafts.

PLANTS FOR BACK WALL OF GREENHOUSE (*A. F. N.*).—Your wall being shaded by a Vine on the roof will only suit plants that require shade from bright sun in summer, and those most suitable are Camellias. The Cape Jasmine will not suit. *Luculia gratissima* would answer, and is winter-flowering and sweet-scented. *Habrothamnus fasciculatus* and *H. elegans* flower

in winter or early in spring, and are suitable; but the most satisfactory subjects would be Camellias, than which no flowers are finer. Monarch, scarlet; Mathotiana alba, white; and Rubens, deep rose, are suitable varieties.

**ANNUALS TO FLOWER IN SPRING (B.).**—To flower at the end of March or beginning of April the seed ought to have been sown in pots during October, and wintered in a light airy position in the greenhouse. It sown now they may flower in April or May. *Asperula azurea setosa*, *Calandrinia umbellata*, *Campaula pentagonica*, *Collinsia verna*, *Eucharitium grandiflorum*, *Gypsophila muralis*, *Leptosiphon densiflorus*, *Limonanthus grandiflorus*, *Linnun grandiflorum coccineum*, *Nemophila insignis*, *N. atomaria*, *Silene pendula ruberrima*, and *Whitavia grandiflora*.

**HEATING A GREENHOUSE (Yorkshire).**—Your house being of only moderate dimensions, and your not being able to attend to it for several hours, it would be best to heat it by gas—that is, if you can command it with certainty. One of the hot-water stoves with pipes would answer best. The Zigzag Gas Boiler, which you will see advertised, is probably the best of that description; or if you have not gas at command, a Deard's International or Reall's Slow-combustion Boiler would suit you; but for prices, &c., write to the manufacturers, stating what you require, and asking for an estimate of complete material for efficiently heating the house.

**STABLE DUNG WITH SAWDUST FOR HOTBEDS (E. F. C.).**—We have experience of this, as we have it to use from horses standing on sawdust in loose boxes. It answers well, but does not require to be so deep as when dung with its litter is used. A bed about 3 feet high will give you sufficient heat, but it needs to be moist, and has only two faults—viz., it heats violently, and so is apt to become dry, and therefore cold. Could you not get some leaves or spent litter to mix with it? We use it in about equal proportions, and it then answers admirably, giving a lasting heat.

**PARAFFIN OIL FOR THIRPS ON VINES (Subscriber).**—After stripping off the loose bark from the stems of the Vines, taking care not to damage the living bark and eyes, you may dress them with paraffin oil mixed with an equal quantity of water, and if you have mealy bug or scale it may be applied in its pure state. Used whilst the eyes are dormant, the paraffin will not injure the Vines, but if it drip or fall on the Pine Apple leaves it may cause them to spot; it ought, therefore, to be used some time before the Vines are introduced into the house.

**MANURING LAWN (F. E. T.).**—The only thing we can advise you to do, as you have no rotten manure, is to procure some good compost from your rubbish-heap, or all kinds of vegetable refuse from a heap that has been turned over a few times until reduced to mould. This put on in March would improve your lawn immensely, raking it well in with an iron rake, sowing some Sicking Clover on it at the rate of 12 lbs. to the acre, and rolling well. We could not tell you where to procure the compost; probably you might, as a favour, obtain it of some farmer in your locality, or he might allow you the requisite quantity of well-rotted manure. Twenty loads of compost, or twelve loads or tons of well-decomposed manure, are a good dressing for an acre.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### DEVIZES POULTRY SHOW.

The third annual Exhibition took place on the 6th and 7th inst., closing unfortunately with the Portsmouth Show. Though lacking quantity, in quality many classes were very good. The Corn Market is a first-rate place for an exhibition, having the light equally distributed, so that the birds can be well examined. For such liberal prizes the entries in several classes were very small. This Exhibition ought to be better supported by exhibitors and the public.

**Dorkings.**—Few in numbers, but eight entries in the first class, which contained Coloured, excluding Silver-Grey. First large and heavy dark-coloured birds, worthy their position, but we should fancy pressed rather hardly for the cup by the first-prize Whites. Second-prize poor birds. Third Rose-combed chickens—very promising. Mr. E. Hooper v.h.c.; very large, but appeared out of condition. No. 5, c.; why, we could not understand.

**Class 2.**—Dorkings (Any other variety). Five entries.—First a grand pen, as we have remarked; we fancied they run the cup pen closely for premier honours. Second Silver-Grey; large, good-bodied birds, but silver not sufficiently distinct. Third chickens (Whites) of good colour; cock's tail somewhat too squirrel-fashion. 3, h.c.; very coarse comb.

**Class 3.**—Cochins (Cinnamon and Buff). Six entries.—First-prize and cup a most splendid-coloured bird, the colour being good down to the very hock—below this we did not like him so well; feathering but poor, and the hen not a worthy companion. Second very mealy-winged. Third very good pen, although perhaps rather too hocked; the feathering was the best in the class, and we should have placed this pen second. Pen 16, Miss Milward's, contained a very good hen.

**Class 4.**—Cochins (Partridge). Six entries.—The leg-feathering in the class generally was weak. First-prize, if we do not err, the hen's tail was twisted; it certainly was so for some time while we examined her. Second-prize—cock leggy, and deficient in feather to our taste. No. 22, h.c.; cock had a twisted comb.

**Class 5.**—Cochins (White). Nine entries.—The Whites at any rate asserted their full right to a class by having half as many entries again as the two other classes of Cochins. First-prize good-coloured birds, and the hen we liked much, but we cannot say as much for the cock, especially in the comb, which went far back—so far back as to twist to one side and lie flat on the

back of the head; it struck us as a great defect. Second-prize a very good pen; we preferred it to the first, and should have so placed them ourselves. 32a, h.c.; good-bodied birds. 26, c.; yellowish. 27, c.; good, but too small. The feathering in this class was the best of the Cochins.

**Class 6.**—Brahmas (Dark). Seventeen entries.—Here again our ideas would have placed the second-prize first. The first-and-cup cock's comb was coarse and rather confused, and the secondaries not to our liking as to carriage; this was also somewhat noticeable in the second-prize pen, but in colour, leg-feathering, and comb we thought it superior to the cup. The hen, too, was a beauty. Third-prize good, but strawy in colour; hen's wings not to our taste as to carriage. Pen 37, c.; cock's tail very much awry. 41, c.; why, we could not imagine.

**Class 7.**—Brahmas (Light). Twenty-seven entries.—The class for numbers in the whole Exhibition, and the best birds close together. Many of the combs in this class were confused and irregular, and nothing adds much more to the beauty of these two classes than a small, neat, regular comb. First-and-cup, comb coarse, hackle-marking very good. Second same fault in comb, good colour, and good hackle, but the hen out of condition, small, and all of a heap. Third, very large good-bodied pen, but not sufficient leg-feathering to our taste. We think the judging here was difficult, and the birds near together. Some would have placed third in the place of honour. 71, v.h.c., good well-feathered birds, but far too much white in the cock's tail. 74, h.c., yellowish-coloured cock, but for shape we thought him best in the class. The Light birds have greatly improved, still the leg-feathering is poor as compared with their darker brethren, and the combs are more generally faulty.

**Spanish.** Six entries.—First-and-cup cock good quality, but must have yielded the pride of place to No. 2 had not the face of the latter been scabby and discoloured. This disfigurement was a sad pity, as the amount of earlobe and its quality where not discoloured was remarkable. The other noticed birds were very good, but it is sad to see such a poverty of entries.

**Class 9.**—Game cocks (Black-breasted and other Reds). Eighteen entries.—First-and-cup Brown Red, good shape and colour, but though an old bird, apparently raw, standing badly, and not showing himself to advantage; for this reason we fancy we should have given the cup to the first-prize Duckwing, also belonging to the same owner. Second-prize a Black Red, which we should have thought too large. Third a close-feathered bird, of good style.

**Game hen (Reds).** Thirteen entries.—Cup a good close hen, but to our fancy No. 112 was vastly her superior. This was a grand bird, unnoticed; we should consider it an oversight. Here again, as in the Duckwing hens, the carriage of the wings was not close enough for our notions.

**Class 11.**—Game cock (Any other variety). Eight entries.—First a very grand bird; as we have already said, we fancied the cup should have rested here. Second a very good Pile.

**Class 12.**—Hens. Nine entries.—All Duckwing but one, several very good birds. 123, h.c., very red on breast, and very loose in wing secondaries.

**Class 13.**—Pencilled Hamburgs. Nine entries.—First Gold, second Silver; we liked the second best, but both belonged to Mr. Beldou; they were both very good. Pen 133, h.c., immense earlobes—far too large and coarse for our taste; indeed, we fancied many of the Hamburgs showed a tendency this way.

**Class 14.**—Spangled Hamburgs. Fourteen entries.—First-and-cup cock a very good bird; hen out of condition, earlobe stained, and feathers not lying smooth. Second also good; both these pens were Golden. Pen 146, h.c., hen, very crooked back. 152, c., Silver, a glorious tail, deficient in bar and wing-markings, but we think this cock will much improve.

**Class 15.**—Black Hamburgs. Ten entries.—First-prize very small, and particularly neat and close birds of true Hamburg shape; we liked them much.

**Class 16.**—Polands. Eight entries.—A very good class, save one unnoticed pen, which spoiled the beauty of the class, and might with almost equal propriety have been entered in one of the Hamburg classes. First Golden; hen very poor, cock not the grandest. Second Silver, a good hen, topknot very large, but bad in shape. Third White-crested Black hen, a miserably small crest. Pen 169, v.h.c., we liked much better than third-prize; they also were Blacks. 170, h.c., a grand-crested cock, the crest being remarkably fine in quality, and the colour and marking of the bird very good, the hen perhaps scarcely his equal; but we should have placed this pen first. If different colours must take the other prizes, we would have given the second to pen 169, although the cock's crest was pecked out, and third to the Golden. The Silvers generally were far superior birds to the other varieties. This class was one of the gems of the Show, every pen, except the nondescript before mentioned, being noticed.

**Class 17.**—Houdans. Seventeen entries.—This and the next class were very good—especially so. First-prize very large, in beautiful plumage, but having straw-coloured saddle feathers.

**Class 18.**—French (Any other variety). Eleven entries.

—Several very grand birds, especially the Crêves, which took first and second, the third prize going to La Flèche, of which there were three pens.

Class 19.—*Malays*. Ten entries.—Again did the Malay-breeders prove that, with fair treatment, they can muster respectably at Devizes—better far than many classes to which silver cups were offered. Here, again, we disagreed with the judging, and would have placed the three prize pens differently—thus, first the second-prize pen, the cock being a grand-coloured bird, but having a whitish feather in his tail, and the neck hackle too loose; second the third-prize pen, the cockerel, though small, being brilliant in plumage; third the first-prize bird. The cockerel in this pen may improve; he was superior to the second-prize pen in neck only; he had far too much brown in the breast. Pen 203, good pen, but inclined to white in tail.

Class 20.—Any other variety. Twelve entries.—Second badly-feathered Black Cochins; third a good pen of Minorcas. 217, c.; we do not fancy them (Plymouth Rocks). Pen 216 a very good pen of Sultans, too dirty to obtain notice; white fowl should be white.

Class 21.—Game Bantams (Red). Fifteen entries.—We liked the winning pens.

Class 22.—Game Bantams (Any other variety). Ten entries.—First a little beauty, Duckwings; second Piles, third Duckwings; pen 238, h.c., good Duckwings. This was a good class.

Class 23.—Bantams (Gold or Silver-laced).—First best colour, but lacing very indifferent (Golden); second Silver, tail splashed. Pen 249 unnoticed, colour bad silver-gilt, but lacing exquisite; we should have placed this first.

Class 24.—Eight entries.—Second-prize, we think it was Black Japanese, found his tail far too much for his convenience.

Class 25.—Aylebury Ducks. Four entries only!—Quality made up for quantity. When Mr. J. K. Fowler has to be content with third, winners ought to be good, and so they were. We fancied the second-prize pen looked the heavier; both were grand specimens. The cup pen was claimed.

Class 26.—Rouen. Fourteen entries.—Here, again, were some magnificent birds.

Class 27.—Black East Indian. Twelve entries.—A perfect show in themselves, eight out of the eleven that put in an appearance being noticed. Mr. G. S. Sainsbury was deservedly first, taking the cup with a wonderfully compact pair, so equal that it was hard to say which was the better bird—it was always the bird you were looking at—both wondrously small and compact, and lustre all that could be desired. Third-prize largest in comparison. Pen 287, v.h.c., very good in lustre, but large compared to the cup pen. This was a beautiful class.

Class 28.—Ducks (Any other variety). Five entries.—The Mandarins and Carolinas little pictures.

Class 29.—Selling Class. Thirty-one entries.—Some very good birds. First-prize Dark Brahmas cheap at double the amount.

Pigeons a very limited supply, some of the classes having no entry, and two or three others only a single pen! We thought the Turbits the best class.

The catalogue had the pens of unsent birds marked "empty," and the varieties somewhat better marked than usual, but in the Variety class many pens were undistinguished; in the Polish all were, and a few of the Hamburgs. If the certificates of entry are not properly filled-up in these particulars we think they should be returned. Many of the specimens were sent off the night of the second day, and so far as we could see, the management was careful. We think all the crested birds should have water outside, not inside the pens. The awards and names of the Judges were published last week.

## PORTSMOUTH POULTRY SHOW.

The sixth annual Exhibition, consisting of poultry, Pigeons, Pheasants, Cage Birds, Rabbits, and Cats, was held at the Drill Hall on the 6th, 7th, and 8th inst. The arrangements were good, except in respect to the delay in fixing the prize cards on the pens; and we would advise the Committee to give some care to this in future, as at this period of the year, when a show opens at one o'clock, there is hardly time to make a complete examination by daylight, and a delay in marking the winners is very vexatious. The numbering might also be conducted on some better principle, as we found it very difficult to follow some of the classes.

In the Game classes the Black Reds were numerous, but not very good; the Brown Red class was much better. The winner of the first prize, which also obtained the cup over the other Game classes, was a very superior bird, and we have little doubt he will, if exhibited, bring his owner many more prizes. The second-prize bird was a good one, but had lost a sickle feather. The Any variety Game were not better than the Black Reds. The first prize went to a tolerably good pair of Duckwings, the second to Piles—the cock a very neat bird, the hen quite unworthy of him, and the third to Duckwings—the cock very hook-beaked, but we could not find a better.

The Buff Cochins were a moderate lot. The first and second-prize pens were tolerably good; in the third the cock was small, and his partner striped in the hackle; we liked a highly-commended pen better. The Any variety Cochins were much superior, Mr. Shrimpton again winning with Partridge, an exquisite pair of Whites being second.

The Dark Brahmas, with a few exceptions, were not good. The first-prize cock was large, but not equal in colour to some of the others; the hen we also thought very brown, but they were in a bad light. The second-prize birds were better in colour, but not so large. Pen 78, highly commended, we liked better than either; the cock had a good black breast, and the pullet was most evenly pencilled, and superior, we thought, to everything in the class. Mr. Lewis Wright also exhibited a good cock, superb in colour, with a very pretty comb; when more developed, and if shown with a better partner, he will be sure to take a leading position. The Light Brahmas were divided into five classes; the result was a few good pens and a great many pens of rubbish, many exhibitors, no doubt, thinking that in such a scramble probably they might find a weak place, and possibly get a prize; in some instances they were not disappointed. In the cockerel class Mr. Dean won with a very pretty bird, good in colour, shape, and well feathered, but the comb showed a disposition to turn, which will probably in time spoil him for exhibition. In the pullet class the competition was very close; the first-prize pen was the largest, the second best in colour. The class for old cocks we did not admire; the first-prize bird was very yellow, the second good in colour, but narrow, and very ugly in the comb. In the class for hens the winners were a grand pair, shown in beautiful condition; the second pen was a moderate one; the third very poor; they were entered at £3 3s., but we did not think them a bargain.

The Dorking class was the best in the Show. The first-prize cock was an old bird, in splendid condition; the second a very promising cockerel, belonging to the same owner; and the third-prize pen contained a very fine hen that well deserves notice. Many high commendations were distributed in this class, and they were well deserved.

The Spanish class was good. The first-prize pullet was a fine specimen; the cock we did not like so well, we thought him narrow in the face, and insignificant when compared with the pullet. The second and third-prize pens contained nice birds. A class for Andalusians followed, which we were pleased to see obtained eight entries. We hope this will encourage the committees of other shows to make classes for this very handsome and useful variety.

The Hamburg classes were well filled. The Polish contained some very handsome birds, and the French were equally good.

The Bantams we did not consider good. In the Black Reds Mr. Adams exhibited a pretty pen, good in colour; but the best cock was shown with a wretched hen, and consequently passed over. In Brown Reds the first-prize hen was remarkably fine. The Black Bantam class was very interesting, and some remarkably good specimens were to be found. Here we would advise one or two exhibitors to be more sparing with their oil; a little may improve the comb, but it looks very bad on the earlobe.

The Ducks, Geese, and Turkeys were not large classes, but a few fine specimens were to be found.

A good collection of Pigeons followed. The Pouter class contained one or two fine birds. The class for Barbs had four entries, all good birds. Carriers came next; the first-prize hen was remarkably good. The Dragon class was well supported, a good pair of Yellows, sound in colour, being first. In Tumblers all the prizes went to Almonds. The Fantails and Jacobins were good; the latter class must have given the Judge some trouble, the competition being very close. A pair of Whites were first, a pair of Yellows second, and pair of Reds third.

The Rabbit classes contained some fine specimens, but they were not so well supported as they deserved to be.

GAME (Black-breasted Red).—1, Pope. 2, Elliott. 3, W. Lovering St. Austell. 4, F. Warde, West Farleigh; J. Forsyth, Wolverhampton; M. Sandford, Martin, Dover.

GAME (Brown-breasted Red).—Cup, F. Warde. 2, S. Matthew, Stowmarket. 3, E. Vinwood, Worcester. 4, H. Browne, Putney Heath.

GAME (Any other variety).—1, D. W. Thomas, Brechin. 2, W. Foster, Deal. 3, Lou, and Rev. F. Dutton, Windrush Vicarage. 4, S. Matthew, c., Pope. COCHINS (Buff and Cinnamon).—1, Harris. 2, Henry Lingwood, Needham Market. 3, Dr. Bullmore, Falmouth. 4, J. Bloodworth, Cheltenham. c, G. Shrimpton, Leighton Buzzard.

COCHINS (Any other variety).—Cup, G. Shrimpton. 2, R. W. Beachey, Fluders, Kingskerswell. 3, Capt. Colridge. 4, N. P. Davies, Isleworth. c, G. Lias, Par Station; J. Sleep, Kingsland, London.

BRAHMA POOTRA (Dark).—1, H. W. Castle, Kensington, London. 2, T. H. Watkinson, Anderton, Devonport. 3, Rev. J. D. Peake, Laleham Vicarage. 4, B. Hill, Southsea; G. Collins, Southwick, Hants; H. W. Reville, Fulham Road; Horace Lingwood, Creting; L. Wright, Crouch End, Hornsey. c, J. Harvey, jun.

BRAHMA POOTRA (Light).—Cockerel.—1, T. A. Dean, Marden, Hereford. 2, J. Chisnall, Rowhams, Southampton. 3, H. Maynard, Holmewood, Ryde, Isle of Wight. 4, H. Hoare, Bitterne; H. Maynard; F. Crook, Forest Hill. BRAHMA POOTRA (Light).—Pullet.—1, T. A. Dean. 2, Mrs. Williamson, Leicester. 3, J. Long, Bromley. 4, P. Haines, Falsgrave, Diss; T. A. Dean. 2, Bird, Fulham. c, J. Bradshaw, Knowle Cranleigh, Guildford; Horace Lingwood; F. Crook.

BRAHMA POOTRA (Light).—Cock.—1 and 2, Mrs. Williamson. 3, J. Bloodworth. 4, P. Haines; Mrs. Willsher, Guildford; — Maynard. c, J. Bradshaw; R. Bird; Miss C. M. Davies, Isleworth.

**BRAMA POOTRA** (Light).—Hens.—1, Mrs. Williamson. 2, Mrs. T. Turner, Ashbury, Woodstock, 3, J. Chisman.  
**BRAMA POOTRA** (Light).—1, J. Bradshaw. 2, Mrs. T. Turner. 3, Mrs. Popple, Stourfield, Churchchurch. *hc*, H. M. Maynard. *c*.—Parcs.  
**DORKINGS**.—1, Cup, and 2, T. C. Burnell, Stratton, Micheldever. 3, Lieut.-Col. Lane, Bracknell. *hc*, F. Caws, Little Pestwood, Southampton. 4, J. H. Putney, Dorking. 5, T. Moore, Petersfield. 6, — Lingwood; Lieut.-Col. Lane.  
**SPANISH**.—1, F. James, Peckham Rye. 2, H. Brown. 3, Nichola Bros., Cuckfield. *hc*, Mrs. E. Alsop, Huddell Ball, Worcester. 4, Nichola Bros., Andover.  
**ANDALUSIANS**.—W. Wildey. 2, T. Moore, Landport. 3, Mrs. D. Bentley, Netley. *hc*, W. Wildey. 2, T. Moore. *c*, Mrs. Bentley. 2, T. Moore.  
**HAMBURGERS** (Gold-pencilled).—1 and 3, T. Faulkner, jun., Merston, Isle of Wight. 2, G. J. Lenny, Lewes. *hc*, T. Faulkner, jun.; T. Edwards, jun., Totnes.  
**HAMBURGERS** (Silver-pencilled).—1, N. Barber, Plymouth. 2, Master E. Moore. 3, T. Faulkner, jun.  
**HAMBURGERS** (Gold or Silver-spangled).—1, N. Barber. 2, C. Browne, Maidstone. 3, Miss Palmer.  
**POLANDS**.—1, J. Hinton, Warminster. 2, T. Edwards, Lyndhurst. 3, Capt. Coleridge, Wargrave. *hc*.—Reeves; T. Edwards; D. Mutton, Brighton (2).  
**FENCIBLES**.—1, — Dring, Faversham. 2, H. Feast, Swansea. 3, Rev. N. J. Ridley, Hellingston House, Newbury. *hc*, Miss A. B. Greene, Wyckham.  
**ANY OTHER VARIETY**.—1, J. Binton (Malays). 2, S. P. Broad, Keigate (White Silkie). 3, S. B. Perry, Lynton (Malays). *hc*, R. S. S. Woodgate, Pembury, Tunbridge Wells; Capt. Terry, Reading (White Malays); A. Ward, Wimpole Street, London (Leghorns). *c*, Rev. F. G. Hodson, North Petherton (Malays); — Bishop, Fareham (Guinea Fowls).  
**GAME BANTAMS** (Black Red).—1, W. Adams, St. Clements, Ipswich. 2, — Wingfield. 3, F. James. *hc*, W. S. Marsh, Vinkland Oaks, Deal (2); C. J. Spary, Ventnor; R. Donger, jun., Parkstone, Poole; E. Southwood, Fakenham.  
**GAME BANTAMS** (Brown Red).—1, S. Belcher, Farnborough. 2, W. Adams. 3, J. Long, Bromley. *hc*, W. S. Marsh; W. Carrab, Tywardreath, Par Station; J. Walsh, Forest Hill.  
**BANTAMS** (Black).—1, W. H. Shackleton, Bradford. 2, R. H. Ashton, Mottram. 3, — Wingfield, Worcester. *hc*, T. E. Thirle, Lowestoft; H. M. Maynard. *c*, A. M. Pigott, Bramford Spike; J. Body, Lloyd's Green, Wittersham.  
**BANTAMS** (Any other variety).—1, Master M. V. Sandford, Martin, Dover. 2, — Wingfield. 3, Rev. F. G. Hodson. *hc*, A. Webb, T. C. Butcher; R. S. S. Woodgate; M. Leno, Markyate Street; J. Bloodworth; Rev. G. S. Cruwys, Cruwys Morchard, Tiverton. *c*, A. M. Pigott; W. S. Marsh; — Fieldier; Rev. G. S. Cruwys.  
**DUCKS** (Aylesbury).—1, S. R. Harris, Cusburne, St. Day. 2, H. Hoare. *c*, A. J. Woodward, Fareham; H. Hoare.  
**DUCKS** (Roulet).—1, Rev. F. G. Hodson. 2, J. Harvey, jun. *hc*, H. Dowsett, Chelmsford; P. Ogilvie, Humberston (2). *c*, Miss H. C. M. Davis, Isle of Wight. 3, Mrs. T. Turner (Light Brahma); Rev. J. P. Bartlett, Exbury Rectory (Light Brahma); — Wildey (Andalusians) (2). *c*. — Chisman (Rose-comb Dorkings); W. Boots, Landport (Dorking and Buff Cochins).  
**SELLING CLASS**.—*Cock or Cocker*.—1, B. Hill (Dark Brahmas). 2, R. W. Beachey (White Cochins). 3, S. Martin, Fratton (Dark Brahmas). *hc*, R. Crabbe, Fratton (Dark Brahmas); H. Brown (Spanish); W. Wildey (Andalusian); — Moore (Andalusian). *c*, Mrs. J. C. Goss, Emsworth (Buff Cochins); J. Chisman (Dark Brahmas); — J. W. Kellway, Merston (Buff Cochins); H. M. Maynard (Light Brahmas).  
**SELLING CLASS**.—*Hens or Pullets*.—1, — Beachey (White Cochins). 2, Capt. Warren (Light Brahmas). 3, — Wylie (Silky Pullets). *hc*, J. Smith, Clapham Junction (Dorkings). — Crabb (Dark Brahmas). *c*, H. M. Maynard (Light Brahmas); — Fit, Fareham (Andalusians).  
**PHEASANTS**.—1, J. T. Turner. 2, J. Body.

## PIGEONS.

**POLLARDS**.—1 and 2, Mrs. Ladd, Calpe. 3, H. Steed, Tunbridge Wells.  
**BARBS**.—1, 2 and 3, H. M. Maynard. *hc*, P. H. Jones, Fulham.  
**CARRIERS**.—*Cock*.—1 and 2, H. M. Maynard. Extra, H. Jacobs, Sandown, Isle of Wight (2). *hc*, E. Goss, Plymouth. *hc*, W. Quickfall, Shanklin (2). *hc*.—1, H. Vimy, Elmfield, Basingstoke. 2, H. M. Maynard. *hc*, W. Quickfall (2); H. M. Maynard. *hc*, W. Quickfall.  
**DRAGONS**.—1, P. H. Jones. 2, T. Donger, jun. 3, H. Jacobs. *hc*, W. Lane, Hereford.  
**TUMBLERS**.—1, 2 and 3, J. Ford, Monkwell Street, London. *hc*, P. H. Jones.  
**FANTAILS**.—1 and 3, H. M. Maynard. 2, J. F. Loversidge, Newark. *hc*, A. J. Vander Meerse, Tooting.  
**JACOBAS**.—1, C. A. Vander Meerse. 3, P. H. Jones.  
**ANTWERPS**.—1, C. S. Copeman, Birmingham. 2 and 3, E. F. Wilson, Brighton. *hc*, W. Tomlins, Oxford; G. J. Lenny.  
**ANY OTHER VARIETY**.—1 and 2, P. H. Jones (Foreign Owls and Archangels). 3, Miss F. I. Davies, Isleworth. *hc*, G. H. Ilewellyn, jun., Stroud (Pigmy Pouters). — Tomlinson, Ryde, Isle of Wight (Sushians); E. S. C. Gibson, Ryde, Isle of Wight (Australian Pigeons); H. Gibson, Brockenhurst (Red Indians and Red Irish Owls); A. A. Vander Meerse (2); O. Nicholson, Portsmouth (Silver Ruffs).  
**SELLING CLASS**.—1, J. Ford (Tumblers). 2, H. M. Maynard (Black Carriers). 3, J. Walker, Burslem (Black Carriers). *hc*, H. Jacobs (White Dragons); — Cork; J. D. Blackman, Southampton (Dun Carriers).

## CANARIES.

**NORWICH** (Clear Yellow).—1 and 2, Bemrose & Orme, Derby. *hc*, W. Inson, Clifton. *hc*, R. B. Newsom, Bromley, Kent; R. B. Newsom, — Walter.  
**NORWICH** (Clear Yellow).—1 and 2, Bemrose & Orme. *hc*, W. Inson; Athersuch & Son, Coventry; W. Walter, Winchester. *hc*, C. Davis, Landport; W. Walter. *c*, Athersuch & Son.  
**NORWICH** (Evenly-marked or Yellow Variegated).—1 and 2, Bemrose & Orme. *hc*, W. Inson; Athersuch & Son. *hc*, Athersuch & Son.  
**NORWICH** (Evenly-marked or Buff Variegated).—1 and 2, Bemrose & Orme. *hc*, W. Inson; Athersuch & Son. *hc*, Athersuch & Son.  
**BEIJIAN** (Clear Buff).—1, T. Moore. 2, C. Davis. *hc*, H. Gibbs; C. Davis. *hc*, H. Gibbs; P. Ogilvie.  
**BEIJIAN** (Evenly-marked or Yellow Variegated).—1, T. Moore. 2, H. Gibbs. *hc*, H. Gibbs; P. Ogilvie.  
**BEIJIAN** (Evenly-marked or Buff Variegated).—1, O. Nicholson. 2, H. Gibbs. *hc*, H. Gibbs; P. Ogilvie.  
**LIZARDS** (Gold or Silver-spangled).—1, Rev. V. Ward. 2 and *hc*, Athersuch & Son.  
**ANY OTHER VARIETY**.—1, Bemrose & Orme (Jonque Cinnamon). 2, — Willsheer (Cinnamon Norwich). *hc*, H. Gibbs (Crested Norwich); — Newsom (Cinnamon). *hc*, C. Knight, Arlesley, Baldock (Yorkshire and Belgian); — Newsom (Crested Norwich); R. King, Southsea (Cape Canary).  
**MULES**.—1, J. Brown, jun., Penrith (Goldfinch). 2, — Willsheer (Yellow Goldfinch). 3, Bemrose & Orme. *hc*, Rev. J. P. Bartlett, Exbury Rectory (Siskin); — Willsheer (Goldfinch). — Walter; J. Brown, jun. (Linnets). *hc*, Rev. V. Ward, Hythe (Goldfinch); R. E. Wade, Bognor (Linnets). *c*, W. Gibling, Southsea (Goldfinch).  
**BRITISH AND FOREIGN BIRDS.**  
**BULLFINCHES**.—1, — Willsheer, Chichester. 2, W. Walter. *hc*, C. Knight. *hc*, O. Nicholson, Portsmouth.  
**GOLDFINCH**.—1, W. Barnes, Portsea. 2, C. Knight. *hc*, C. Knight; T. Willsheer; O. Nicholson. *hc*, E. F. Marvin, Southsea; O. Nicholson.

**SEYLAKE**.—1, W. Walter. 2, — Simmons, Portsea. *hc*. — Barnes; O. Nicholson.  
**SISKIN, REDPOLE, OR LINNET**.—1 and *hc*, W. Barnes. 2, T. Willsheer.  
**BLACKBIRD OR THRUSH**.—1, O. Nicholson. 2, B. Hill. *hc*, D. Carver.  
**BRITISH BIRDS** (Any other variety).—1, J. T. Turner (Raven). 2, W. Boots (Starling). *hc*, J. T. Turner (Buzard); W. Boots (Magpie). *hc*, Miss Barnes (Cock Robin).  
**GROUP OF BRITISH BIRDS IN ONE CASE** (Consisting of not less than eight distinct varieties of Finches, Buntings, Warblers, &c.).—1, W. Barnes. 2, T. Willsheer. 3, W. Walter. *hc*, Rev. J. P. Bartlett; Dr. W. Case, Fareham; R. E. Wade.  
**FOREIGN BIRDS** (Any variety).—1, — Nicholson (Lories). 2 and 4, W. Walter (Love Birds and Australian). 3, — Barnes (Spice Birds). *hc*, Sergt. S. Burgess, Southsea (Love Birds); — Lewis (King Parrot); W. Walter (King Parrot and Grass Parrots); — Barnes (St. Helena Waxbills). *hc*, Rev. J. Bartlett (Pin-tailed Wydah); W. Walter (Pin-tailed Wydah and Madagascar Finch); — Nicholson (Rosella and Cockatoo).  
**SELLING CLASS**.—1, 2, and *hc*. — Nicholson (Ring-necked Parakeets, Cardinal, Avadavats, and Goldfinch). 3, Rev. J. P. Bartlett (Budgregars). *hc*, W. Walter (Parakeets and Spice Birds); — Nicholson (Budgregars and Goldfinch). *c*, W. Walter (Love Birds).

## RABBITS.

**LENGTH OF EAR**.—1 and 2, F. Banks, Doughty Street, London. *hc*, T. Buckland, Oxford; C. King, St. John's Wood.  
**BLACK-AND-WHITE, AND BLUE-AND-WHITE**.—1 and 2, F. Banks. *hc*. — Hume. *hc*, F. Loveband, North Street, London, N.W.  
**GREY-AND-WHITE, AND YELLOW-AND-WHITE**.—1, C. King. 2, F. Loveband. *hc*, C. Arthur, Melksham.  
**TORTOISESHELL**.—1 and 2, F. Banks. *hc*, C. King.  
**SELF-COLORED**.—1, F. Banks. 2, F. Loveband. *hc*, F. Banks; Smith and Simmons, Portsea. *hc*. — Ellis.  
**FOREIGN** (Any variety).—1, — Arthur (Angora). 2, G. P. & R. Hackett, Haverstock Hill. *hc*, Mrs. H. Coward, Dulwich (White Angora); R. C. Coward, Dulwich (Himalaya); E. S. C. Gibson. *hc*, A. J. Woodward (Silver-Grey); — Ellis (Silver-Grey); — Anns (Chinchilla); — Arthur (Angora). *c*, Mrs. R. Coward (White Angora); A. J. Woodward (Angora); E. S. C. Gibson (Silver-Grey); G. P. & R. Hackett (Silver-Grey).  
**FOR WEIGHT, THE HEAVIEST REGARDLESS OF BREED**.—1, J. N. Harrison, Belper. 2, A. J. Woodward.  
**SELLING CLASS**.—1, Smith & Simmons. 2, F. Banks. *hc*, C. King (Black Lop); Smith & Simmons; Mrs. Dressing (Himalayan). *hc*, E. S. C. Gibson.

## CATS.

**TORTOISESHELL, OR TORTOISESHELL-AND-WHITE**.—1, H. Strofton, Streatham. 2, Mrs. Lamb. *c*, T. Twoose, Portsea.  
**TABBIES**.—1, Nichols Bros. 2, G. Ellis, Cornhill. *hc*, E. Baxter, Dalston Lane; Dr. Case. *c*. — Lullham, Brighton.  
**BLACK**.—1, A. Moody, Landport. 2, H. M. Maynard. *hc*, E. Orme, Derby. *c*, W. Baker, Portsea.  
**BLACK-AND-WHITE**.—1, Mrs. Walter, Winchester. 2, W. Nottage, Northampton.  
**LOTTED**.—1, T. Weighman, Hatfield. 2, W. T. Roberts, Landport. *hc*, T. G. Simpson (2); Mrs. Focock; — Stowe. *c*, Miss Boville, Southsea; Mrs. Cull, Ringwood.  
**KITTENS**.—1, T. Brice, Havant. 2, W. Waits, Fort Cumberland, Portsmouth. *c*, Nichols Bros.; B. Wergate, Gosport; R. S. Samways, Southampton.  
**ANY OTHER VARIETY**.—Gold Medal, Lady D. Nevill, Dangstein. 2, O. Nicholson. 3, Mrs. Chantrell, Rottingdean, Brighton.  
**JUDGES**.—*Poultry*: Mr. J. Martin, Claines, Worcester; Mr. P. H. Jones, London. *Pigeons*: Mr. J. Percival, London. *Cage Birds*: Mr. A. W. Willmore, London. *Rabbits*: Mr. Phelps. *Cats*: Mr. P. H. Jones, London.

## PRESTON POULTRY AND PIGEON SHOW.

On the 7th and 8th this Show was held in the area of the Corn Exchange, Preston, and so far as the number of entries and the quality of the birds exhibited are concerned, may be considered to have been eminently successful. It is some twelve years since an exhibition of a similar description was held in the town, but it is intended, we understand, to establish the Show as an annual institution. A better place than the area of the Corn Exchange for such an Exhibition could not be obtained; it is well lighted. The Show was well arranged, and the improved zinc pens being used, every visitor was enabled without inconvenience to observe the exhibits. The poultry, comprising the major part of the Exhibition, were accommodated on tables in the area, there being three double rows of pens, reaching the length of the building, and one single row at the bottom or west end. The Pigeons were placed in single rows in the balconies. The Dorkings were anything but good, but the *Spanish* and *Cochins* of both varieties were fine birds, and so also were the *Brahmas*, particularly the Darks. The *Game* fowl were a good show, and the *Hamburgs* were much admired, the Golden-spangled carrying off the palm in respect to quality. The *French* fowls made a splendid display, especially the *Crève-Cœur*; and in the class for Any other variety there was a splendid array of birds, the *Polands* exhibited being particularly good. The *Bantams* throughout were capital, and the first and second (both Blacks) in the class for Black or White Bantams were really magnificent birds. There was an excellent show of *Ducks*, more especially in the fancy class. *Gese* were strongly represented in point of quality, but only the first and second-prize winners among the *Turkeys* were worthy of notice. In the Selling classes there were some good birds, but on the whole these confined classes could not compare at all favourably with the open competitions, but this is only what might be expected, considering the conditions provided that the price should not exceed 40s. with an entrance fee of 1s.  
 The show of *Pigeons* on the whole was an excellent one, all the classes being well filled. The *Dragons* were splendid, many of the most noted breeders and fanciers in the kingdom being represented. The *Antwerps* and *Barbs* were also superior classes; but the *French Owls* were hardly up to the standard usually seen at shows of this extent. The *English Owls*, how-

ever, were capital, and the same remark may be applied to Turbits. The Nuns were far better birds than are generally exhibited, and in very good condition. Jacobins were a fair class, and among the Fantails were some splendid birds, including the pair which carried off the cup at the Crystal Palace Show. The Trumpeters were principally those of the recently-imported variety, and, like the majority of these birds exhibited in this country, they were much out of condition. The Judges regretted very much that birds of such great beauty could not be kept in better form, but their lack of condition is very probably owing solely to climatic influences. The Variety class comprised some fine birds, particularly a pair of Magpies, which were awarded premier honours.

**DORKINGS.—Coloured.**—1 and Cup, J. Walker, Rochdale. 2, J. Robinson, G. E. Fearon, Whitehaven. *Any other variety.*—1, J. Robinson. 2, L. Wren, Lowestoft.

**SPANISH.**—1 and Cup, J. Leeming, Broughton. 2, Furness & Sudall, Rawten-stall. *hc*, Pallister & Hawkins, Thirsk; J. Leeming.

**COCHINS.—Cinnamon and Buff.**—1 and Cup, W. A. Taylor, Manchester. 2, W. A. Burnell, Southwell. *hc*, T. Stretch, Ormskirk; J. Robinson; W. A. Taylor. *Any other variety.*—1, T. Stretch. 2, W. A. Taylor. *vhc*, W. Whitworth, jun., Manchester. *hc*, W. A. Taylor; J. & T. Weeks, Bootle, Carnforth. *c*, J. Woods, Brimley.

**BRAHMAS.—Dark.**—1 and Cup, W. A. Taylor. 2 and *vhc*, T. F. Andsell, St. Helens. *hc*, S. A. Smith, Withington, Manchester; J. Lyon, St. Helens. *c*, D. Monson, Bradford. *Light.*—1 and 2, T. J. Cotterill, Birmingham. *Game.—Any one or colour.*—Cock—1, E. Aykroyd, Eccleshill. 2, — Mason, Lancaster. *hc*, W. Ormerod, Todmorden; Barrow & Rauthmell, Kendal.

*Game.—Black or Brown Reds.*—1, T. Mason. 2, C. H. Wolf, Altrincham. *hc*, Miss Nelson, Farnham; J. Harrell, Sunderland. *Any other variety.*—1 and Cup, D. Gibson, Barradale. 2, E. Aykroyd. *hc*, Morris & Woods, Accrington; T. P. Lyon, Liverpool.

**HAMBOURG.—Silver-pencilled.**—1, J. Robinson. 2, Duke of Sutherland, Trentham Hall. *hc*, H. Beldon, Bingley. *Golden-pencilled.*—1, H. Beldon. 2, G. & J. Duckworth, Church. *hc*, W. Clayton, Keighley.

**HAMBOURG.—Silver-spangled.**—1, Ashton & Booth, Mottram. 2 and *vhc*, J. Fielding, Newchurch. *hc*, Duke of Sutherland. *Golden-spangled.*—1, Cup, and 2, G. & J. Duckworth, Church. W. A. Hyde, Ashton-under-Lyne; N. Marlor, Detroit; J. Bowness, Newchurch. *hc*, T. Dean, Keighley; J. Hall, Stacksteads; H. Beldon.

**HAMBOURG.—Black.**—1, Rev. W. Sergeantson, Shrewsbury. 2, H. Beldon. *hc*, N. Marlor; J. Fielding.

**FRENCH FOWLS.**—1, R. B. Wood, Uttoxeter. 2, J. J. Malden. *vhc*, J. Robinson. *hc*, Mrs. E. Wilkinson, Greenhey; E. Harrison, Cottam; Miss S. Horahy, St. Michaels.

**ANY OTHER VARIETY.**—1 and Cup, W. A. Taylor. 2, W. Harvey, Sheffield. *vhc*, H. Beldon. *hc*, T. Dean. *c*, J. S. Roeth, Chesterfield; W. A. Taylor; H. Beldon.

**GAME BANTAMS.—Any one or colour.**—Cock.—1 and Cup, Miss M. J. Nelson. 2, J. Eaton, Grantham. *vhc*, G. Hall, Kendal. *hc*, W. F. Entwistle, Bradford.

*BANTAMS.—Game.—Black or Brown Red.*—1, Miss M. J. Nelson. 2, W. F. Entwistle. *vhc*, G. Hall. *Any other variety.*—1, J. Eaton. 2, G. Hall. *vhc*, G. Hall; H. A. Clark, Aspathia. *hc*, W. F. Entwistle. *c*, T. Barker, Mursley.

*BANTAMS.—Black or White.*—1 and Cup, W. H. Shackleton, Bradford. 2, W. H. Robinson, Keighley. *vhc*, H. Beldon. *hc*, W. Moore, Keighley; J. Walker. *c*, J. Borthshaw, Rotherham. *Any other variety.*—1, E. Watton, Rawtenstall. 2, J. Walker. *vhc*, M. Leno, Dunstable. *hc*, H. B. Smith, Broughton; Rev. W. Sergeantson; W. A. Taylor.

**DUCKS.—Aylesbury.**—1 and 2, J. Walker. *hc*, H. Frankland, Chorch. *Rouen.*—1 and Cup, T. Wakefield, Nettle-Yillows. 2, J. Walker. *vhc*, S. H. Stott, Preston. *hc*, H. B. Smith; Rev. S. G. Perry, Ashton. *Black East Indian.*—1, Rev. W. Sergeantson. 2, J. J. Malden. *hc*, G. S. Sainsbury, Divizea; J. J. Malden; Rev. W. Sergeantson. *Any other variety.*—1 and 2, H. B. Smith. *vhc*, J. Walker. *hc*, W. Binna, Tadsey; H. B. Smith; M. Leno.

**GREY.**—1, Cup, and 2, J. Walker. *hc*, Rev. T. A. Peters, Alston College; H. Beldon. *hc*, W. Penny, Cottam; Barrow & Rauthmell. *c*, L. Atyon, Chorley.

**TURKEYS.**—1, J. Walker. 2, F. E. Rawson, Halifax. *hc*, J. Brookwell, Wigao.

**SELLING CLASS.—Brahma, Dorking, or Cochins.**—Cock.—1, C. Sidgwick, Keighley. 2, E. Fearon. *vhc*, H. Beldon. *hc*, J. Walker; Mrs. T. W. L. Hind, Kendal; T. T. Parker, Chorley; W. W. Rutledge, Kendal; G. Anderson, Accrington; W. A. Taylor; D. Monson; J. F. Walton, Rawtenstall. *Hens.*—1, Mrs. T. W. L. Hind. 2, J. Leeming. *hc*, T. T. Parker; T. W. Finch, Fulwood; W. Harvey. *c*, T. T. Parker; C. Sidgwick; W. W. Rutledge.

**SELLING CLASS.—Any other variety.**—Cock.—1, A. Bamford, Middleton. 2, H. Beldon. *hc*, J. Leeming. *Hens.*—1, Furness & Sudall. 2, Pallister and Hawkins. *hc*, T. P. Lyon; J. Leeming.

**SELLING CLASS.—Ducks.**—1, T. Wakefield. 2, D. Gibson. *hc*, H. Frankland.

#### PIGEONS.

**CARRIERS.—Cocks.**—1, Cup, and 2, E. Horner, Leeds. *vhc*, G. J. Taylor, Huddersfield; F. C. Stretch, Ormskirk. *hc*, H. Yardley, Birmingham; R. Fulton. *Hens.*—1, R. Fulton. 2, E. Horner. *hc*, E. Horner; R. Fulton.

**POUTERS.—Cock.**—1, W. Harvey. 2, Mrs. Ladd, Calne, Wilts. *hc*, E. Horner; R. Fulton. *Hens.*—1, E. Horner. 2, W. Harvey. *hc*, Mrs. Ladd; Major J. H. Crier, Southport. *c*, R. Fulton.

**DRAGOONS.—Blue or Silver.**—1 and 2, F. Graham, Birkenhead. *hc*, T. Charley, Blackburn; W. Hill, Handforth. *Any other variety.*—1 and Cup, F. Graham. 2, W. Hill. *hc*, J. Thompson, Ringley; F. Graham; W. Hill.

**WINTERPS.**—1, W. Gamon, Chester. 2, J. Gardner, Preston. *hc*, W. B. Bull, Newport Pagnell; W. Gamon; H. Yardley; J. Gardner.

**BARBS.**—1 and Cup, F. Wild. 2, G. J. Taylor. *hc*, F. Wild; E. Horner; J. Stanley, Blackburn; R. Fulton.

**TRUMPETERS.—Almond.**—1, W. Harvey. 2, R. Fulton. *hc*, J. Gardner; E. Horner; J. J. Stott, Preston. *Any other variety.*—1, J. Fielding. 2, H. Yardley. *hc*, G. J. Taylor. *hc*, E. Horner.

**OWLS.—Foreign.**—1, F. Wild. 2, E. Horner. *English.*—1, W. Binna. 2, H. Vernon, Liverpool.

**TRANTS.**—1 and Cup, W. Croft, Ripley. 2, J. Gardner. *hc*, S. Salter, Oxford; R. Fulton.

**NUNS.**—1, W. Croft. 2, E. Horner. *hc*, W. Croft; W. Harvey; E. Horner. *Jacobins.*—1, J. Thompson. 2, R. Fulton. *hc*, G. J. Taylor; E. Horner.

**FANTAILS.**—1 and 2, Rev. W. Sergeantson. *hc*, F. J. Loversidge, Newark; E. Horner; W. Hill.

**TRUMPETERS.**—1 and Cup, J. Lederer, Liverpool. 2, W. Harvey. *hc*, R. Fulton.

**ANY OTHER VARIETY.**—1, T. W. Aldsworth, Houghton. 2, J. Gardner. *hc*, H. Yardley; W. Harvey; G. J. Taylor; E. Horner; W. Hill.

**SELLING CLASS.—Price not to exceed 80s.**—1 and 2, W. Hill. *hc*, E. Horner.

**JUDGES.—Poultry:** Mr. Brierley, Middleton; Mr. R. Teebay, Fulwood. **Pigeons:** Mr. F. Esquilant, Brixton. —(Preston Guardian.)

are thirty-six classes for poultry, two for Rabbits, eleven for Pigeons, and eleven for cage birds. Thirteen cups are offered for competition.

#### ABERDEEN POULTRY AND PIGEON SHOW.

It has been the custom of late when reporting on Pigeon and poultry shows to begin with an account of the railway journey, the probable collision on the way, a description of the town where the show is held, and the dinner in the evening, and what was said and done at the same; but on this occasion, as our report will be of unusual length, we will leave the granite city and Union Street alone, and begin at once by saying that the Show was held in the Volunteer Drill Hall, a building admirably adapted for the purpose and lent gratuitously to the Club, an example worthy of imitation in other towns. The poultry were arranged close to the walls, and the Pigeons on four long tables in the centre of the Hall, with ample space between.

#### PIGEONS.

The Pigeons numbered 409 pens, of which 207 were Pouters; and the verdict of the Judges—Mr. James Hule, of Glasgow, and Mr. J. Hawley, of Girlington, near Bradford—regarding the latter was that such a collection was never seen at any show before. There is no doubt that this result was owing to the magnificent birds of Mr. George Ure, of Dundee, who has not exhibited this season before. This gentleman has succeeded in bringing the Pouter almost to perfection, and his Blacks and Yellows are now equal in every respect to the Blues and Reds, which have long been best in shape and style. But we must proceed with our detailed description of the most noticeable birds.

The *Pouters* commenced with No. 286 in the catalogue. Blue-pied cocks, any age, were thirteen pens. No. 288 (T. Rule), third prize, was a bird of good colour and marking, but rather faulty about the legs, which were a trifle rough. No. 289 (J. E. Spence), highly commended, had neither marking, style, nor crop to commend him, but was the longest Pouter in the Show, being 21 inches long and over 7 inches in the leg. No. 290 (A. H. Stewart), first prize and cup for the best old cock, was recognised as one of the young Blues at Glasgow a year ago, where he was passed with a mere commendation. He is a grand bird with a beautiful crop, fine style, and of the best colour, but a little too wide in the pinion. There was no grumbling at the decision of the Judges here, and the bird reflects credit on his breeder, Mr. G. Ure. No. 294 (G. Ure), though unnoticed, was in our opinion one of the best, and worthy of one of the prizes. He has a fine bib, moon, stocking legs, and style, but solid wings. No. 296 (G. Ure), second prize—there was not much to choose between him and the last-mentioned, but we preferred 294. No. 297 (R. Fulton)—this was the bird bred and exhibited by the late James Miller, of Glasgow, at the Glasgow Show a year ago, when he was allowed to be the handsomest bird there, but his chequered marks spoil his chance of a prize. We think he has thickened a little, and he wanted the long toe-feathers he had last year. With clean stocking limbs these feathers set off a bird immensely, and fanciers should be careful when packing their Pouters not to confine them so as to injure their feet.

Black cocks, any age, were eight pens, and the colour of most of them was perfection. The contrast between the Black and White is so decided, that Pouters of this colour, when first-rate, look, perhaps, better than any. No. 300 (R. W. Bryce), commended, wanted bib, and was very foul below—a prevailing fault in Blacks, though a good many of them that look so well in their pens are in the habit of leaving their foul thigh-feathers in their lofts behind them. No. 301 (J. Grant), highly commended, is past his best showing days, being heavy. He is of a good colour and marking, but roughish in the legs. If we mistake not this bird was first at the late Glasgow Show, and his position there was thought to be a mistake. No. 302 (G. Ure), we thought, as we saw the bird on the last day of the Show, that he was the best in the class. Of a glossy raven colour, perfectly marked, and long in feather, with beautiful stocking legs, he was the *beau ideal* of a Black Pouter, but he sat sulking by the side of the pen, and would not come out. He is called the Black Prince, after a champion of former days, and his owner may well be proud of him. No. 303 (R. Fulton), first prize, was a bird of good colour and marking, and, when showing on his block, a very taking bird, with an enormous crop; when off the block, however, he is rather of the level style, and seems wanting behind; he is rough-legged. No. 304 (G. Ure), second prize, is a finely-coloured cock, and well marked. He is rather wide-legged, but of a good shape, and stylish. In our opinion, however, he is not to be compared with the unnoticed Black Prince. No. 305 (J. White).—This bird sat sulking till the last day of the Exhibition, and would not show. When he did come out he proved himself a grand one. With a crop as big and round as a fish globe, and perfect colour and marking, he looked a giant. He was bred by Mr. Ure, and was first in the young class for Blacks at Glasgow last year. No. 306 (G. Ure), third prize, was without doubt the best style of a Pouter among the lot. Of immense length of feather and leg, with good

**FAKENHAM POULTRY SHOW.**—The entries close on the 20th inst., and the schedule merits the attention of exhibitors. There

TURKEYS.—*vhc*, G. Brace.

W. Hogbson. *Hens*.—1 and 3, R. Somerville. 2, A. Ridpath. *hc*, W. Bonthron.  
c, J. Hunter, Alva.



McConnell, Belfast. 3, J. McCalpin, Belfast. *hc*, J. McKeown. *c*, J. & W. Stitt (2).

**BELGIAN.—Buff or Variegated.—Cock**.—1, J. McNab, Belfast. 2, W. Gaw. 3, J. McKeown. *c*, W. Gault; J. McCalpin; J. Brown. *Hens*.—1 and 3, J. & W. Stitt. 2, W. Gault.

**SCOTCH.—Yellow.—Cock**.—1, W. Gault. 2, J. McConnell. 3, T. Fox, Belfast. *hc*, J. & W. Stitt; J. Gordon, Belfast. *hc*, J. McDowell, Belfast; J. McNab; T. Fox; J. & W. Stitt (2). *Hens*.—Cap. 1, and 2, S. Croil, Belfast. 3 and *hc*, J. McNab. *c*, J. & W. Stitt; J. Brown, Belfast; T. Fox.

**SCOTCH.—Buff or Variegated.—Cock**.—1 and *hc*, T. Fox. 2, J. Cousins, Belfast. 3, S. Croil. *hc*, J. McConnell; J. McKeown; J. Young, Belfast. *Hens*.—1 and 2, J. & W. Stitt. 3, S. Croil. *c*, J. McConnell; T. Fox.

**ANY OTHER VARIETY**.—1 and 3, Misses E. & J. Baxter. 2, J. & W. Stitt.

**MULES**.—1, 2 and 3, Misses E. & J. Baxter. *hc*, W. J. Mulligan.

**PAPAROTS.—Green or Grey**.—1, Mrs. J. M. Wilson, Kilmarnock. 2, J. L. Marshall, Knock, Belfast. 3, J. Frame.

**MACAW OR COCKATOO**.—1, J. W. Crawford, Belfast. 2, Mrs. J. M. Wilson.

**BRITISH SONG BIRD**.—1, Misses E. & J. Baxter (Linnet). 2, J. Frame (Goldfinch). 3, J. Barlow.

**SELLING CLASS**.—1, J. McNab (Yellow Variegated). 2 and 3, J. & W. Stitt (Yellow Scotch and Variegated).

**JUDGES.—Poultry**: Mr. M. Leno. **Pigeons**: Mr. P. H. Jones. **Cage Birds**: Mr. W. A. Blakston.

## NENTHEAD POULTRY SHOW.

THIS Show, held on the 8th, was a great success, for when it is considered that it is five miles from a railway station across a bleak country, it must be confessed that the Committee had no easy task before them; but when we arrived (half starved) we could not understand why everybody and everything seemed to be *en fête*. "It's pay week" says one; but that cannot account for it. At last we find out that there is only one pay week in the year, and that yesterday the lead company paid £5000 over the pay-table, and that this is the holiday week for the whole year. We found that the company had, at an expense of £3000, built a splendid school for the miners' children, and in this beautiful building the poultry Show was held, and truly there was, for such an out-of-the-way place, a grand collection got together.

First came *Game* with a really good Black Red first. In *Hamburghs* the first-prize pen were large, good Gold-spangles, honestly shown with a few white feathers. Singular to say, there was not a single entry of *Dorkings*, the climate being said to be too cold for them. The adult *Spanish* were a very good pen—large face, and good upright comb. The first-prize pen of *Brahmas* contained the best bird in the Show—a large, deep, short-legged, well-pencilled hen. In the class for a pair of hens the first prize went to a pair of *Houdans*, such as are rarely seen at our large shows. In *Ducks* a very large pen of Aylesbury were first, Rouens second. Of *Rabbits* there were only two pens, and these very poor. *Pigeons* the same; White Pouters first, Blues second.

[We hear from the Judge that this Show was to have been advertised in our columns, but the clerk, by mistake, sent the advertisement to another paper.]

**GAME.—Black-breasted and other Reds**.—1 and *c*, T. Brown, Donks Hall. 2, J. Stephenson. *hc*, W. Walton, Cocklake. **Chickens**.—1, W. Walton. 2, J. Stephenson, Dykeheads. *hc*, T. Brown. *hc*, J. Walton, Alston. *c*, T. Brown; J. Stephenson.

**GAME.—Any other variety**.—1, T. Brown. 2, W. Walton. **Chickens**.—1, W. Walton. 2, W. Potts, Allendale Town.

**HAMBURGHs.—Golden-spangled**.—1, Rev. H. Robinson, Nenthead. 2, J. Richardson. **Chickens**.—1, J. Marshall, Kirkoswald. 2 and *c*, J. Dowson, Alston.

**HAMBURGHs.—Golden-pencilled**.—1, J. J. Millican. **Chickens**.—1 and 2, Cousin & Walton, Alston.

**HAMBURGHs.—Silver-spangled**.—1, J. J. Millican. 2, J. Richardson. **Chickens**.—1, J. Marshall. 2, J. Richardson. *c*, L. F. White, Alston.

**HAMBURGHs.—Silver-pencilled**.—1, J. Marshall. 2, J. Stephenson. **Chickens**.—1, J. Marshall. 2, J. Stephenson.

**SPANISH**.—1, T. Storey, Alston. **Chickens**.—1, T. Storey.

**BRAHMA POOTRA**.—1, 2, and *hc*, J. Goodburn, Nenthead. *hc*, S. Teasdale, Alston. *c*, R. Bell, Nenthead.

**BANTAMS**.—1, J. Bell, Barhaugh Mill. 2, E. Hymers, Hudgill.

**ANY VARIETY.—Hens**.—1 and *c*, Dr. Horder, Nenthead. 2, T. Brown. *hc*, J. Walton. *hc*, J. Marshall.

**ANY OTHER PURE BREED**.—1, J. Furness, Alston. 2, Dr. Horder.

**DUCKs**.—1, J. Kindred, Bayles. 2, J. Richardson.

**PIGEONS**.—1, W. Graham. 2, Cousin & Walton.

**CAGE BIRDS.**

**CANARY.—Belgian**.—1 and 2, T. Brown. *hc*, M. Stelling, Wallington.

**YELLOW**.—1, J. Shield, Leadgate. 2, T. Brown. **Buff**.—1, J. Shield. **Yellow-marked**.—1, M. Stelling. 2, J. Stephenson. *hc*, W. Rutherford. **Buff-marked**.—1, T. Brown. 2, W. Thompson. *hc*, M. Stelling. **Green**.—1, R. Doyle. 2, M. Stelling. *hc*, D. Hounam, Alston; J. Robson; L. F. White; J. Shield. **Dun**.—1, J. Shield. 2, M. Stelling. *c*, J. Robson. **Best Couple**.—1, T. Brown. 2, J. Shield. *hc*, W. Thompson.

**GOLDFINCH**.—1 and 2, J. Shield. *hc*, W. Rutherford; M. Stelling.

**MULE**.—1 and *hc*, J. Shield. 2, M. Stelling.

**ANY OTHER VARIETY**.—1, T. Brown. 2, J. Stephenson.

**RABBITS**.—1 and 2, W. Graham.

**JUDGES.—Poultry**: Mr. S. Burn, Whitby. **Cage Birds**: Mr. T. Lowrey, Gateshead.

MR. EDWARD HEWITT, of Sparkbrook, Birmingham, is most unwillingly compelled to announce that he cannot for the present

officiate as judge at poultry and Pigeon exhibitions. This arises entirely from personal indisposition, and is in compliance with medical advice.

## BLACKBURN PIGEON SHOW.

(From a Correspondent.)

THIS Show was held in the Exchange Hall, on the 9th and 10th inst. The entries were exceptionally large, numbering about six hundred, the quality of the birds excellent, and the whole arrangements very satisfactory, reflecting great credit on the Committee of Management.

**CARRIERS** were grand, the first and second prizes going to two well-known birds. Hens were very good, Mr. Fulton taking first with a splendid Dun, Mr. Horner being second with Black. The young Carrier class had twenty-six entries, and we have seldom seen so many fine birds. The first prize went to a grand Black from Mr. Yardley, Mr. Massey taking second; it was difficult to decide which was the better, for they were both nearly perfect.

**POULTER COCKS** (Any colour).—Mr. Hsvey here won first and cup with a fine Blue, Mrs. Ladd being second with White in grand condition. Pouter hens, any colour.—First, Black, sound in colour and slender in girth; second a good Red. The whole class was good, not an inferior bird in it.

**BARBS**.—Mr. Firth did not give other exhibitors a chance when he brought his champion Black cock, closely followed by two others, taking all three prizes and cup. Hens.—Here again Mr. Firth took first, Mr. Fulton coming in a good second. The whole class was highly commended. In young Barbs, as in the previous class, Mr. Firth took the three prizes. This is a class we should like to see done away with, for some of the birds are prodigies for their stated ages. A very highly commended Red hen should have been second, sound in colour and perfect in eye and beak.

**DRAGONS** (Blue).—The judging of this class gave great dissatisfaction to fanciers of this noble bird, the first-prize being decidedly out of place, the bird having a light beak. We counted above a dozen superior birds in this class. Dragons (Silver).—First and second wonderful birds. Red or Yellow.—Here Mr. Graham won first and cup with his splendid Yellow; Mr. W. Hill taking second and third with good birds in every point, but deficient in colour. White or any other colour.—First very good. Pen 187 should have been next.

**TUMBLERS**.—Our little pets, the Almond Tumblers, were a fine show. We have seldom seen so many and of such high quality. The first and cup were won by Mr. Yardley. Short-faced Tumblers (Any other variety).—The awards here were a little doubtful, but all colours competing there was room to differ. The Judges were evidently head-and-beak fanciers.

Our gems of the Show, the foreign Owls, do not muster in large numbers, there being only ten entries. Mr. Townson won easily with his champion cock, an exquisite White in spotless condition. The second was a Blue, and the third Black.

**TRUMPETERS**.—The prizes went to fine imported birds.

**FANTAILS** formed a large class, and there were some good birds, but with no motion.

**JACOBIN COCKs**.—The second-prize bird was small, neat, good in colour, and ought to have been first. Hens.—First a good Yellow, second Black, third Red. An excellent class.

**MAGPIES**.—Among these were many good birds of all colours and in fine condition.

**NUNS** were a good class, and many well trimmed.

**TURBITS**.—Red or Yellow were very well judged. First a good bird, small and sound in colour. Any other colour.—The first prize went to a nice-headed Blue bird of Mr. Croft's. Second a bad Silver. There were several good Blacks in this class not noticed.

**LONG-FACED TUMBLERS**.—This class numbered forty entries. It is seldom we see so many and of such rare quality. Several were too near akin to the Short-faced to receive an award.

**ANTWERPS**, both Long and Short-faced, were a fine display, and must have puzzled the Judges; the prizes were well awarded. There were ninety-two entries in this class alone.

**ANY OTHER VARIETY**.—In this class, as usual, were many pretty birds. It is a highly interesting class, the colours and markings being so varied. First, a curious-looking little bird like a Blue Owl (Fried); second, Red Swallow; third, English Owl. We were surprised that the class for English Owls had been omitted in the schedule. It must have been an oversight of the Committee, for it is usually one of the largest in the catalogue, and too good to pass in the northern counties. We are sure there would have been a great muster of these elegant birds. In the Selling classes were several birds evidently entered to win the cup and readily claimed, for as soon as the judging was over we noticed sold tickets hung on the pens.

**CARRIERS.—Cock**.—1, G. J. Taylor, Far Town, Huddersfield. 2, E. Horner, Harewood, Leeds. 3, R. Fulton, Brockley Road, New Cross, London. *hc*, R. Fulton; E. Horner. *Hens*.—1 and *hc*, R. Fulton. 2, E. Horner. 3, J. & W. Towerson, Egremont. **Young**.—1, H. Yardley, Birmingham. 2, Master D.

Massey, Spalding. 3, E. Horner. *hc*, A. Billeyald, Nottingham; R. Fulton; J. Baker, Spring Grove, London, W.; W. Sefton, Blackburn. *c*, C. H. Clarke, Old Sneyton; R. Fulton; J. Stanley; E. Horner.

**POULTERS.—Cock**.—1, W. Harvey, Sheffield. 2, Mrs. Ladd, Calne. 3, R. Fulton. *hc*, G. J. Taylor; E. Horner; J. Baker. *Hen*.—1, E. Beckwith, Monkwearmouth. 2, W. Harvey. 3, F. W. Zurborst, Donnybrook, Dublin. *vhc*, G. J. Taylor. *hc*, Mrs. S. Ladd; R. Fulton; J. Baker. *c*, Major J. H. Cryer, Southport.

**BARBS.—Cock**.—1, 2, and 3, J. Firth, Dewsbury. *vhc*, E. Horner. *hc*, R. Fulton; J. Stanley, Salford, Blackburn. *c*, J. Firth; R. Fulton. *Hen*.—1, J. Firth. 2, R. Fulton. 3, F. Wild, Hyde. *vhc*, E. Horner. *hc*, G. J. Taylor; J. Stanley; E. Horner. *c*, T. W. Townson; R. Fulton. *Young*.—1 and 2, J. Firth. 3, J. Pearce, Burton-on-Trent. *vhc*, Major J. H. Cryer. *hc*, E. Beckwith; T. Charnley, Salford, Blackburn. *c*, J. Firth; R. Fulton (2).

**DRAGONS.—Blue**.—1, J. Guthrie, Hexham. 2, T. Charnley. 3, W. Harvey. *vhc*, J. Stanley. *hc*, W. Gamon, Chester; E. Horner; W. Sefton. *c*, W. H. Mitchell, Moseley, Birmingham; F. Graham, Birkenhead. *Silver, any colour bars*.—1, J. Guthrie. 2, F. Graham. *hc*, H. Yardley; F. Graham; W. Sefton. *Red or Yellow*.—1, F. Graham. 2 and 3, W. Hill, Handforth. *vhc*, W. Hill; J. Ashworth, Blackburn. *hc*, W. A. Mitchell; W. Hill; J. Ashworth; H. Hemondhalgh, Higher Eanam. *White, or any other colour*.—1, C. E. Duckworth, Watteville. 2, R. Robson, jun., Chester-le-Street. 3, A. A. Vander Meersch, Lower Tooting. *hc*, C. E. Duckworth; R. Fulton; J. Baker. *c*, J. Watts.

**TUMBLERS.—Short-faced.—Almonds**.—1 and Cup, H. Yardley. 2, W. Brydon, Dunse. 3, R. Fulton. *vhc*, W. Harvey. *hc*, H. Yardley; R. Fulton. *c*, C. E. Duckworth. *Any other variety*.—1, W. Walton, Burnley. 2, E. Beckwith. 3, W. Brydon. *vhc*, C. E. Duckworth. *hc*, E. A. Seale, Kilgobbin, Dublin; R. Fulton; H. Yardley. *c*, C. E. Duckworth; J. Fielding, jun., Rochdale; T. & W. Oddie; G. J. Taylor.

**OWLS.—Foreign**.—1, T. W. Townson. 2, E. Horner. 3, W. Lumb, Rochdale. *vhc*, F. Wild. *c*, F. Wild (2); J. Gardner.

**TRUMPETERS**.—1 and 2, W. Harvey. 3, J. Lederer, Dootla. *hc*, R. Fulton; E. Horner.

**FANTAILS**.—1, E. Horner. 2, A. Silvester, Sheffield. 3, E. A. Seale. *vhc*, J. Richmond, Oswaldtwistle. *hc*, J. F. Loverside, Newark; T. W. Townson. *c*, T. W. Townson.

**JACOBS.—Cock**.—1 and Cup, E. A. Seale. 2, T. Newell. *hc*, W. Lumb; T. Newell; W. Dugdale, jun., Burnley. *c*, R. Fulton; E. Horner. *Hen*.—1, W. Lumb. 2 and 3, E. A. Seale. *vhc*, J. Baker. *hc*, G. J. Taylor; A. A. Vander Meersch; J. Baker.

**MAORIES**.—1 and 3, E. Horner. 2, C. G. Hitchcock, Townsend. *vhc*, R. J. Goodwin, Bucknell, Stoke-on-Trent. *hc*, J. B. Bowdon, Blackburn; R. J. Goodwin; H. Yardley; J. Richmond. *c*, J. B. Bowdon.

**NUNS**.—1, Cup, and *vhc*, E. Horner. 2, W. Hill. 3, A. H. Imrie, Ayr. *hc*, W. Croft, Killinghall, Ripley; J. Richmond.

**TURBITS**.—*Red or Yellow*.—1, E. A. Seale. 2, R. Fulton. 3, W. Croft. *vhc*, G. Hardy, Shepherd's Bush; S. Salter, Egrove. *hc*, G. Hardy; J. G. Orr, Beith; J. W. Edge, Erdington. *Any other colour*.—1, W. Croft. 2, J. Baker. 3, E. C. Stretch, Ormskirk. *hc*, W. Croft; A. Silvester; S. Salter. *c*, S. Salter; J. Baker.

**TUMBLERS.—Long-faced.—Almonds and Mottles**.—1, D. Riddiough, jun., Bradford. 2, E. Horner. 3, E. Beckwith. *vhc*, R. Fulton. *hc*, T. Newell, Ashton; J. Ford; W. Hill. *Any other variety*.—1, J. W. Harling, Burnley. 2, J. Dye, Hexham. 3, R. Fulton. *hc*, A. A. Vander Meersch; W. Harvey.

**ANTWERPS.—Short-faced.—Cock**.—1, W. Gamon. 2, W. Ellis, Idle. 3, H. Yardley. *vhc*, W. Gamon; J. Gardner, Preston. *hc*, E. Horner; A. Bingham, Manchester. *Hen*.—1, W. Gamon. 2, H. Yardley. 3, W. Ellis. *hc*, W. Slater, Gravelly Hill, Birmingham; W. Ellis. *c*, F. Woodhouse, Blackburn; J. Stanley.

**ANTWERPS.—Long-faced.—Homing Birds.—Cock**.—1, H. Jennings, Al-lerton, Bradford. 2, J. Wright, Manchester. 3, W. Ellis. *vhc*, W. Gamon; Capt. G. Edwards, Hammersmith Mall. *hc*, A. Webster, Kirkstall, Leeds; C. F. England, Stroud; W. Ellis; H. Jennings. *c*, W. Ellis (2). *Hen*.—1 and *hc*, W. Ellis. 2, H. Jennings. 3, F. W. Zurborst. *vhc*, Capt. G. Edwards.

Mr. W. Ellis wins point Cup for Antwerp.

**ANY OTHER VARIETY**.—1, J. & W. Townson. 2, E. Horner. 3, F. Woodhouse. *vhc*, H. Yardley. *hc*, C. E. Duckworth; J. B. Bowdon; W. Hill (2); T. Charnley; H. Yardley (2); G. J. Taylor. *c*, W. Sefton.

**SELLING CLASS.—Single.—Not to exceed 30s.**—1 and Cup, W. Sefton. 2, E. Horner. 3, T. Pincock, Preston. *vhc*, J. Walker, Burslem. *hc*, P. R. Spencer, Hereford; J. Watts, Hazlewell Hall, Birmingham; J. Walker. *c*, J. Pearce; R. White, Manchester. *Pair.—Not to exceed £2*.—1, W. Sefton. 2, J. Guthrie. 3, E. Horner. *vhc*, W. Bulmer, Spalding. *hc*, E. A. Seale; R. White; J. Ford, Monkwell Street, London; W. Hill; T. Charnley. *c*, J. Richmond; W. Sutcliffe, Burnley; W. Hill; C. G. Case, Spalding.

**JUDGES**.—Mr. T. Rule; Mr. H. Beldon.

## BIRMINGHAM COLUMBARIAN SOCIETY'S SHOW.

THE ninth annual Show was held at the Athenæum Rooms, Temple Street, on the 8th inst. No less than 419 pens were exhibited. The following is the prize list:—

**CARRIERS.—Black**.—Cup and 1, F. Smith, Selly Oak. 1, H. Hallam, Lozells. 3, J. Watts, King's Heath. *Dun*.—1, 2, and 3, Capt. De Winton, Hereford. *Any other colour*.—1 and 3, J. Watts. 2, S. A. Cooper, Walsall.

**POULTERS.—Blue**.—1, J. Guthrie, Hexham. 2, A. H. Stewart, Birmingham. 3, R. Barrett, Stroud. *Black*.—Cup, 1, and 2, G. Holloway, Stroud. *White*.—Cup and 1, G. Holloway. 2 and 3, H. Pratt.

**TUMBLERS.—Almond**.—Cup, 1, and 2, T. Hallam, Lozells. 2, H. Adams, Beverley.

**TUMBLERS.—Short-faced.—Baldheads**.—1 and 2, W. Woodhouse, King's Lynn. 3, J. Watts. *Beards*.—1 and 2, W. Woodhouse. *Any other variety*.—Cup and 1, H. Adams. 2 and 3, T. Hallam. *hc*, H. Adams; T. Hallam.

**TUMBLERS.—Muffed**.—Cup, 1, and 3, J. Watts. 2, J. M. Bott, Acoek's Green.

**TUMBLERS.—Long-faced.—Clean-legged**.—1, J. Guthrie. 2, J. M. Bott. 3, J. Watts. *Balds and Beards*.—1 and 3, J. Watts. 2, J. B. Bowdon, Blackburn.

**JACOBS**.—Cup and 1, F. Smith. 2, W. Croft, Ripley. 3, W. E. Easton, Hull.

**TURBITS**.—Cup and 1, E. T. Dew, Weston-super-Mare. 2, W. Croft. 3, J. W. Edge, Erdington.

**BARBS**.—Cup, 1, and 2, F. Smith. 3, E. Thompson.

**NUNS**.—Cup and 1, J. Watts. 2 and 3, W. Croft.

**OWLS**.—Cup and 1, J. Watts. 2, W. Ridley. 3, J. W. Edge.

**DRAGONS**.—*Blue*.—Cup and 1, W. Gamon, Chester. 2, F. Graham, Birkenhead. 3, J. Watts. *Silver*.—Cup and 1, F. Graham. 2 and 3, H. Allsopp. *hc*, F. Graham; J. W. Ludlow. *Yellow and Red*.—Cup, 1, and 3, F. Graham.

2, J. Watts. *White*.—Cup and 1, J. G. Dunn, Newcastle-on-Tyne. 2, F. Graham. 3, J. Watts.

**ANTWERPS.—Dun**.—Cup and 1, W. Gamon. 2, J. W. Ludlow, Birmingham. 3, C. F. Copeman, Birmingham. *hc*, J. W. Ludlow; J. Phelps; C. F. Copeman. *Blue*.—Cup and 1, J. Watts. 2, J. W. Ludlow. *Blue Chequered*.—Cup and 1, G. Phelps, Lozells. 2, 3, and *hc*, J. W. Ludlow. *Red Chequered*.—Cup and 1, H. K. Wright, Birmingham. 2, C. F. Copeman. 3, J. W. Ludlow.

**MAORIES**.—Cup, 1, and 2, J. B. Bowden. 3, J. Watts.

**SWALLOWS**.—1 and 2, J. Watts.

**ANY OTHER VARIETY**.—1, M. Ord, Durham. 2 and Cup, J. Watts. 3, J. W. Ludlow.

**CARRIERS.—Black.—Cocks**.—1, H. Hallam. 2, F. Smith. *Hens*.—1, F. Smith. 2, H. Hallam. *Any other colour.—Cocks*.—1 and 2, J. Watts. 3, S. A. Cooper. *Hens*.—1, S. A. Cooper. 2, J. Watts. *Dun.—Hens*.—1 and 2, H. Hallam.

**POULTERS.—White.—Cocks**.—1, H. Pratt, Knowle. *Hens*.—1 and 2, H. Pratt. *Any other colour.—Cocks*.—1 and 2, H. Pratt. *Hens*.—1 and 2, H. Pratt.

**TUMBLERS.—Almond**.—1 and 2, T. Hallam. 3, H. Pamphilon, Stoke-on-Trent.

**TUMBLERS.—Short-faced.—Balds**.—1 and 2, W. Woodhouse. 3, J. W. Edge. *Beards*.—1 and 2, W. Woodhouse. *Any other variety*.—1 and 2, T. Hallam. 3, J. Watts.

**BARBS**.—1, F. Smith. 2 and 3, H. R. Wright.

**OWLS.—English**.—1 and 3, G. E. Sawdon, Leeds. 2, S. A. Cooper.

**FANTAILS**.—1, J. W. Edge.

**JACOBS**.—Cup, 1, and 2, W. T. Breeden. 3, W. E. Easton.

**TURBITS**.—Cup, 1, 2, and 3, E. T. Dew.

**NUNS**.—1, W. E. Easton. 2, J. Watts. 3, S. A. Cooper.

**MAORIES**.—1, J. Watts.

**TUMBLERS.—Long-muffed**.—Cup, 1, and 2, G. Phelps. 3, J. Watts. *Long-faced*.—Cup, 1, and 2, J. M. Bott. 3, J. Watts.

**DRAGONS**.—*Blue*.—1, H. Allsopp. 2, J. Watts. 3, W. Gamon. *Silver*.—1, F. Graham. 2 and 3, H. Allsopp. *Red or Yellow*.—1, F. Graham. *White*.—1, F. Graham.

**ANTWERPS.—Dun**.—1 and 2, T. Chnlee, Birmingham. 3 and *hc*, W. Gamon. *Blue*.—1, W. Gamon. 2, J. W. Ludlow. *Blue Chequered*.—1 and 2, 3, J. W. Ludlow. *Red Chequered*.—1, W. Gamon. 2, G. Phelps.

**ANTWERPS.—Cock**.—1, S. Foster. 2, J. W. Ludlow. 3, J. Watts.

**ANY OTHER VARIETY**.—1 and 2, J. W. Ludlow. 3, J. Watts. *hc*, M. Ord; J. W. Ludlow (2).

**ANY OTHER VARIETY.—Single**.—1, M. Ord. 2, J. Watts. 3, J. W. Ludlow. *hc*, A. H. Stewart; J. W. Ludlow (4); G. E. Sawdon.

**ANY VARIETY.—Single, except those in which single birds are shown**.—1, T. Hallam. 2, F. Smith. 3, H. Pamphilon.

A cup for best single bird in the Show.—H. Pratt (Pouter Cock).

A cup for best pair of birds in the Show.—W. Woodhouse (Short-faced Bald-heads).

**JUDGES**.—Mr. F. Esquilant, Effra Road, Brixton. *Flying Tumblers*.—Mr. D. E. Careless, Aston.

## PIGEON NOMENCLATURE.

I NOTICE your reporter's reply in last Thursday's issue. As I was not present at Glasgow I am unable to state how I should have described the colour of the young Carrier in pen 77. I endeavoured to point out that the term "silver dun" means "bad-coloured dun," and nothing else. The terms "dun" and "silver dun" are used indiscriminately by Antwerp breeders to indicate the colour generally called "mealy," or "ash-mealy." As neither dun nor silver is allowed to colours of these birds, no confusion is occasioned by speaking of a dun or silver dun bird so long as such a Pigeon is an Antwerp; but as soon as the appellation "silver dun" is used to indicate the colour of a Pigeon belonging to a breed in which the colours dun and silver, or either of them exists, it becomes a very vague term.

If "silver dun" were not employed to denominate a colour other than the colour which it really means, I should know that your reporter wishes to state "that the colour of the Pigeon in pen 77 was bad-coloured dun." I have seen Silver Dragons called "Silver Dun Dragons" in this Journal. I wish, therefore, to point out to your reporter that I do not understand whether he has fallen into either of the errors of calling either a mealy or a silver Carrier a "silver dun," or whether he wished to state "that the young Carrier in pen 77 was a bad-coloured dun, and that it should have been entered in class 12."—TURKEY QUILL.

## THE NORTHAMPTON RABBIT SCHEDULE.

THE Northampton Rabbit Show will soon be here again, and although the schedule is not so complete as last year's was, yet we hope it will meet with the same success, for it will be well remembered that never before was so good a collection of Rabbits brought together.

This year Northampton has nine classes—one less than at the last Show, that for weight being omitted, we are sorry to say (probably on account of the scarcity of entries then), for the prizes of this class are the only encouragement fanciers have to feed Rabbits. In still continuing to allow only two classes for Lops, Northampton, in my opinion, is wise; for if it cannot afford a class for each colour, it is right in refraining from giving more. The Angoras have more allotted to them than any of the others, having a cup to themselves besides the usual prizes. I expected to see a class for Belgian Hares and Patagonians, exclusive of the Any other variety one, but am disappointed this year, yet hope it will be thought of at the next meeting.

It is pleasing to find that the Local class is not omitted, for this was exceedingly well filled last year, and no doubt will be so this, for Northampton is known to possess many sident fanciers. The entry fees are low, and "the exhibits will be judged the day before the Show opens," thus giving the Judge, who is a gentleman highly capable, more time to award the prizes.

Although Northampton has somewhat stinted the cups in comparison with last year, we must not forget that these are generally subscribed for, and that the subscriptions, it appears, being few, accounts for the decrease. It is quite evident that if fanciers wish for good prizes and a number of classes, they must support the Show with their purses, which, it may be remarked, they do not to the extent they should.

Before concluding, the following improvements might be made for the future:—That the restricted price (20s.) of the Selling class be raised to at least 30s., as it is well known that a thoroughly good Rabbit cannot be bought for the former; that the second and third prizes be of greater value, even if this has to be deducted from the first one, and I repeat what was said before regarding the class for Belgian Hares and Patagonians.

Taken altogether, Northampton is still worthy of being one of our leading exhibitions, if not the leading one; and I sincerely hope that fanciers will support it with large entries now, and next year with greater and more numerous subscriptions and gifts for extra prizes and classes.—R.

### BEE PASTURAGE.

As "C. H. E." and others are anxious to obtain a complete list of plants that yield honey, it will be well to consider the subject in a longer notice than is generally admitted into the "Letter Box." Dr. Watts, in his beautiful hymn, has spoken of the busy bee gathering "honey all the day from every open flower." I should like to hear the word "many" used instead of "every," for there are hundreds of flowers and plants which do not produce honey.

It is beyond the powers of the best informed mind to name every plant and flower found in this country which yields honey. Bees have been seen at work on the dock, daisy, and dandelion in places and times of scarcity; yet no writer, probably, would venture to put these in the list of honey-producing plants. Of these the following list contains the most valuable, and also some that are of comparatively little value to bees.

Winter Aconite.	Cabbage (all the Brassica tribe).
Tussilago.	Broom.
Rosemary.	Gorse or Whin.
Crocus.	Berberis.
Willow.	Sweet Briar.
Osier.	Ribes sanguineum.
Hepatica.	Malow.
Violet.	Maple.
Veronica.	Sycamore and Plane.
Cyanus (Blue-bottle).	Lime.
Syringa.	Bean.
Hyacinth.	Field Mustard ( <i>Sinapis arvensis</i> ).
Almond.	Bird's-foot Trefoil ( <i>Lotus corniculatus</i>
Borage.	and major).
Single Wallflower.	St. John's-wort.
Apricot.	Honeysuckle.
Gooseberry.	Buckwheat.
Peach.	Hyssop.
Plum and Cherry.	Nasturtium.
Pear and Apple.	Viper's Engloss.
Currant.	White Clover.
Raspberry.	Hollyhock.
Brambleberry.	Heliotrop.
Mignonette.	Thyme.
Laurel.	Ivy.
Hazel.	Melilotus leucantia.
Turnip.	Heather (Heaths of all kinds).

In early spring crocuses, border hyacinths, single wallflowers, some kind of willows (*Salix*) are welcomed and much visited by bees, and it is believed all of them yield both honey and pollen. Then follow the flowers of the gooseberry, cherry, plum, pear, and apple, all of which are rich in honey of exquisite flavour. Before the apple blossoms fade the sycamore produces its flower, which is scarcely equalled for the abundance and richness of the honey it produces. In this country honey is not distilled (does not drop) from the flowers of the sycamore tree, but it literally lies on them, and is clammy to the hand. The sycamore continues a long while in flower, filling up the interval between the fall of the fruit-tree blossoms and the blooming of the white clover. Field beans flower about the same time—rather later, perhaps, than sycamores, and furnish bees with large supplies. Field mustard, which is a weed covering many a corn field in some parts of the country, flowers about the same time as field beans. It, too, yields large supplies of honey, which speedily crystallises. In Yorkshire and Derbyshire this plant is called ketlock; in Lancashire it is called skellock; in Wigtonshire it is termed rarches; and here, in Lancashire and Cheshire, it is called the yellow weed.

The reader may be interested to know that no two kinds of plants produce honey alike. White clover is in this country the queen of honey plants. It continues a long time in flower, and yields a large quantity of rich transparent honey of excellent flavour. It is, perhaps, one of the most sensitive of our honey plants—sensitive, I mean, to the change of weather, and produces but little honey in the face of an east wind. Even mignonette,

which is a great favourite with bees, is not so easily affected by cold weather as white clover. Red clover is doubtless a honey plant, but its petals are too deep for the proboscis of the honey bee. It cannot reach the receptacles of honey at the bottom of the petals. This remark applies also to flowers of beans, but these are tapped or pierced at their bottoms, just opposite the honey-nectar, and through these pierced holes the rich treasure of bean flowers is extracted. It is a question whether the flowers are tapped by humble bees or our own little workers.

There has been so much written about bees on the moors and heather honey that I need not add much here. Heather comes into blossom about the beginning of August, and continues to flower for a month or five weeks. Very large harvests of honey are obtained from the moors. Some hives of bees gather 50 lbs. and upwards in three weeks from the tiny blossoms of heather. The moorland honey differs greatly in taste and appearance from all other kinds obtained in Great Britain. Some English gentlemen like it; but the English palate, generally speaking, prefers the milder honey gathered from fruit trees, sycamore, and clover. Heather honey is largely produced and highly esteemed in Scotland.

The honey seasons of Great Britain may be divided into three periods—viz., 1st, April and May; 2nd, June and July; 3rd, August. The fruit trees are the great honey-producers during the first period; for the second we have sycamores, beans, field mustard, limes, and white clover. There are dozens of honey plants flowering at this season, but they are unimportant compared to those named. Lastly comes the moorland heather, so valuable to the bee-farmer.

One or two hints will be enough for the intelligent reader. The first is to endeavour to have strong hives of bees in spring ready to gather the honey so abundantly produced by fruit trees. The hives of many bee-keepers are so weak in spring that little advantage is gained from our orchards, whereas those who keep large hives and manage them better often find their hives increase daily in weight from 2 lbs. to 5 lbs. each in fine weather during the first season of honey-gathering. The story of the value of strong hives has never been told, neither is it possible to describe the industry of the honey bee.

Borage, mignonette, and *Centaurea Cyanus* are three annuals whose flowers are very rich in honey, and "C. H. E." cannot have too much of these in the vicinity of his apiary.—A. PETTIGREW, *Sal.*

### BEEES IN 1874.

SEVERAL of your staff or other correspondents have been forward in giving us their benediction this new year in the matter of flowers, and poultry, and Pigeons, &c. Let not us bee-keepers be behind in wishing each other health and prosperity, and our insect friends great encouragement and success in the main business of their lives. This business consists in two important things—first, the maintenance of their race and its multiplication; secondly, as a means to that end, the harvesting in its proper season of what is to them "the staff of life"—namely, honey of excellent quality and in good abundance. Be it so. Our disappointments have been great in this last respect. May both the farmer and the bee-keeper have reason to speak of the whole of Great Britain as a "land flowing with milk and honey!" That the two products thus connected together in the language of the Bible are with good reason coupled together has been remarkably shown this last season, because both milk and honey have been together less abundant than usual; and I believe, as I have stated before, from the same cause—namely, the excessive saturation of the soil by the unusual rainfall of last winter, and the great deficiency of sun-power throughout the spring and summer. No weather-augury can be otherwise than a more or less fortunate surmise; but we may reasonably hope that in this respect 1874 will be widely different from 1873. Certainly, no deficiency of honey next summer can be put down to an excessive rainfall this winter. It has been splendid hitherto.

Apart from the question of honey and the proper increase of our apiaries, there is another matter in which we may look forward to 1874, from our point of view, with much interest and hopefulness. There is likely to be a grand display of apiarian paraphernalia and a show of hives and honey in the Crystal Palace some time next autumn; nor will the year close without the formation of some sort of national society of apiculture, to which we cannot otherwise than heartily wish well. In due time these matters will be brought before us. Perhaps, also, something like decisive knowledge will be gained in reference to certain things which cannot yet be said to fall within our actual observation. The question "What is honey?" may be solved in this year of grace, if Mr. Pettigrew and his co-religionists will but verify their surmises. Indeed, your correspondent, "A SOUTH LANCASHIRE BEE-KEEPER," would seem to have solved it already: for does he not tell us he has "found it out by accident" . . . and "exactly as described?" No one can fail to see the immense value and importance of such a discovery;

for will it not place us apirians in a position to defy the season, and to produce honey of any quality and any flavour at will and almost at any moment's notice, as well in midwinter as at midsummer? May we not hope, too, that an effectual stop will be put to that miserable system which sees a cow's tail in a pump-handle, against which our old friend "A RENFREWSHIRE BEE-KEEPER" protests with such righteous force of language? So when our last Christmas chimes were pealing forth their merry strains, may we not hope that with some kind of prudence they were ringing out the false and ringing in the true in our little world as in larger spheres? Let us hope that no one of our guild in THE JOURNAL OF HORTICULTURE will soil his hands this year with any transactions, such as are justly condemned by the last writer I have named—least of all any member of our most honourable craft in the speciality we love.—B. & W.

### IS HONEY RE-SWALLOWED BY BEES?

The best proof I have that honey does not require re-swallowing and disgorging (and your readers can judge for themselves), is, that I have watched over and over again the bees as they came from the fields with their honey, and where they had no chance of deceiving me, and have seen them commence to fill and seal the cells without ever re-swallowing it. I believe bees have the power of extracting the excess of water from honey the moment they swallow it. As soon as this is done the honey gradually becomes thicker.

Since the foregoing was written I have read Mr. Pettigrew's article (see page 389 of last volume), and ask how the bees go to work, and how they manage to re-swallow the honey stored in the super, where he says, "Fix a few pieces of empty white comb in a super as already described, and then place it over the empty hive; in less than ten minutes' time the bees will be in the super and readily commence work." Knowing what bees can do under these circumstances, I fail to see how they will follow out their instincts, and at the same time re-swallow all the honey carried into the combs and have a super finished as it ought to be in the time specified by Mr. Pettigrew. In fact, he has here proven that bees do not re-swallow honey.

I have also read with some degree of astonishment both "B. & W.'s" and Mr. Pettigrew's mode of feeding. I cannot see how their bees fail to take food quickly enough from the bottle, the best of all feeders. I find there is no difficulty in a good stock of bees taking down 4 lbs. in twelve hours; and according to Mr. Pettigrew's instructions, if 15 lbs. are sufficient from September till March, it cannot be said that to take that amount in four or five days is a tedious operation. But why such a fuss about feeding bees so hurriedly? From 1 to 2 lbs. daily is a quick-enough rate to administer sugar to bees. And let me here warn the readers of this to be very careful in giving bees sugar in large quantities at once, thereby overheating the hive; also to beware of pouring 2 lbs. of sugar at a time on a hive of bees, on account of the fighting it will cause among the inmates, besides so clogging many of their wings that they cannot fly.—A LANARKSHIRE BEE-KEEPER.

### OUR LETTER BOX.

POULTRY JUDGE (D. W.).—Mr. Burn's fitness for the office is well known and needs no further advocacy.

TIME FOR SETTING COCHINS AND BRAHMAS (W. W.).—We consider this the best time if you wish to breed prize birds. The earliest chickens are the easiest to rear if you have a large barn or outhouse with an earthen floor in which to keep the chickens during the first six or seven weeks. They require protection from rain, sleet, draughts, and cutting winds; they also want to be warm during the long nights of midwinter. There is no such thing as a first-class Black Bantam cock with a red earlobe. It should be quite round and smooth, with a dead white surface.

PRODUCE OF EGGS (C. L. M.).—If from forty-five hens you are now getting six eggs per day, you are going on very well, and producing above the average. You may look now for a daily increase. It has hitherto been one of the worst laying seasons on record. We cannot understand why you keep such a medley lot of birds. Having only fifty or sixty, with farm and stack-yard for them to run in, we think it would be much better if you confined yourself to one breed—say Dorkings or Brahmans; but from the description you give, it should be the place of place for a Dorking run. We are not friendly to crosses, but we particularly object to a mixture of sitting and non-sitting breeds. The hens you have laying now are probably those one year old. Where eggs are much wanted we should never keep hens more than two seasons. We do not hold with allowances of food, as the need cannot be always the same. For instance, where threshing is going on there is the barn-door scratch, and fowls never do so well as when they have it. At those times as much food is not required as at others. Fowls should be fed according to their requirements, and these are much greater at some times than others. In the summer they, like ourselves, require less food, and in the winter more. If, then, one undeviating rule of feeding be adhered to, half the food will be wasted in the summer, and the fowls will be half fed in the winter. Eight o'clock in the morning is too late for the first meal; they should at this time of year be fed at daybreak. They have then been fasting from fourteen to fifteen hours; this is much against laying and condition. If inconvenient, some food may be put in their runs overnight. Supposing that, as in most farmyards, there is always some food to be had, we will say let the birds be fed at daybreak with corn, not oats (except the Ducks and Geese); at mid-day let them have the house scraps, and at evening another feed of corn. The pulped mangold amounts to nothing, and may be omitted without injury or detriment. The man in charge must vary this at discre-

tion, taking care the birds are always sufficiently fed. We will undertake to say there will be an increase in the number of eggs, and no increase in the consumption of food. Maize may sometimes be given for a change.

EGG-PRODUCING FOWLS (W. W.).—You may choose among Spanish, Crève-Cœurs, and Houdans. They are the best. If you will tell us the nature of your run, we shall be glad to advise you further.

EGGS (A. Young Farmer).—We know of no reason for doubting the honesty of the person you inquire about. Mr. Wright's "Illustrated Poultry Book" contains the characteristics.

VARIETIES (L. G. W.).—We answered some of all your queries. Mr. Wright's "Illustrated Poultry Book" is the best. The Canary we do not remember.

REMOVING BEES FROM THEIR HIVE (A. Young Apiarian).—We cannot endorse the plan recommended by "AN OLD MAN" of taking bees from hives, and prefer the other modes usually adopted by practical bee-keepers—viz., driving or shaking them out. The driving may be done in about fifteen minutes, and when the bees are sitting loosely amongst the combs they could be shaken out in less than one minute. The straw hive should be nearly full of bees before this work is done, say about the end of April, and even then the brood would have to be sacrificed and a loss sustained. By attention to the straw hive you may have it ready for swarming by the beginning of May, when the swarm could be introduced to the bar-frame hive, and three weeks afterwards all the bees could be driven out of the straw hive into another bar-frame. Thus you would have two bar-frame hives and the honey in the old straw hive. We think no other way of compassing the end you have in view so eligible as this.

TAKING WASPS (Mariana).—Of what use would it be? The following from a contemporary is applicable:—"What Sir John Lubbock has to be answered for if old maids as a body take to this interesting study may happily be more readily conceived than felt. A correspondent writes: Encouraged by the success of Sir John Lubbock with the solitary wasp of the Pyrenees, three sister spinsters residing under the shadow of Durham Cathedral have been endeavouring to tame a few of the British species. The result is unsatisfactory. One of the sisters has a large patch of powder-blue over the left eye, another has her right arm in a sling, and the third, the doctor thinks, will be able to drive out in a week. The wasps were liberated."

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barometer at 329 feet sea level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.		Rain.
1874.		Dry.	Wet.			Max.	Min.	In sun.	On grass.	In.
Jan.										
We. 7.	Inches. 30.242	deg. 39.0	deg. 87.0	S.W.	deg. 87.9	deg. 48.3	deg. 81.7	deg. 64.1	deg. 28.4	0.016
Th. 8.	29.885	34.0	85.8	S.	87.7	44.2	83.4	44.2	81.4	0.016
Fri. 9.	29.897	46.6	45.0	S.	93.7	49.6	87.8	52.5	37.5	0.017
Sat. 10.	30.023	45.0	48.7	S.W.	41.6	52.1	45.5	70.7	46.3	—
Sun. 11.	30.116	34.0	38.8	W.	42.2	43.5	81.8	44.6	27.8	0.021
Mo. 12.	29.879	41.9	42.6	W.	40.7	49.2	82.2	55.5	32.8	—
Tu. 13.	30.118	33.0	39.8	W.	40.6	42.9	80.2	67.1	26.4	—
Means	30.017	40.0	33.7		40.1	46.4	84.3	56.7	61.8	0.093

### REMARKS.

7th.—Fine all the morning and noon; rather less so in the afternoon, but fine night.

8th.—Rather dull early; slight rain at 11 a.m., and showery after; windy at night.

9th.—Wet morning; showery and uncomfortable all day.

10th.—Dull though fair morning; showery before noon, but fine afterwards.

11th.—Fine morning; fair all day, but not bright; slightly foggy.

12th.—Rainy morning, and dull all day.

13th.—White frost in the morning, followed by a beautiful day; bright and clear.

Weather very similar to that of the two previous weeks, but more pleasant, owing to the absence of the fogs with which they had been accompanied.—G. J. SIMONS.

### COVENT GARDEN MARKET.—JANUARY 14.

SUPPLIES, both of fruit and vegetables, are fully equal to the demand.

#### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	sieve	1	0	1	Oranges.....	100	4	0	10
Chestnuts.....	bushel	10	0	2	Quinces.....	doz.	0	0	0
Grapes, hothouse.....	lb.	2	0	7	Pears, kitchen.....	doz.	1	0	2
Filberts.....	lb.	1	0	1	Pears, dessert.....	doz.	2	0	0
Coals.....	lb.	1	6	0	Pine Apples.....	lb.	3	0	8
Lemons.....	100	8	0	12	Walnuts.....	bushel	10	0	16
Melons.....	each	1	0	8	ditto.....	100	2	0	2

#### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	6	Mushrooms.....	pottle	1	0	2
Asparagus.....	100	6	0	8	Mustard & Cress.....	punnet	0	2	0
Beans.....	25	0	0	0	Onions.....	bushel	2	0	4
Beans, Kidney.....	100	2	0	0	Pickling.....	quart	8	0	0
Beet, Red.....	doz	1	0	8	Parsley per doz. bunches	4	0	6	0
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	0	0	0
Cauliflower.....	100	1	6	0	Potatoes.....	bushel	8	0	4
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0
Celery.....	doz.	3	0	6	Round.....	do.	0	0	0
Celery.....	bundle	1	8	2	Spinach.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	4	0	Rhubarb.....	bundle	1	0	2
Cucumbers.....	each	1	0	2	Salsify.....	bundle	1	6	0
Cucumbers.....	doz.	0	0	0	Savoy.....	doz.	1	0	2
Endive.....	doz.	2	0	0	Scorzonera.....	bundle	1	0	0
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	2	0	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	3	0
Herbs.....	bunch	0	3	0	Spinach.....	bunch	2	0	0
Herbs.....	bundle	3	4	0	Tomatoes.....	doz.	2	0	4
Leeks.....	bunch	0	0	0	Turnips.....	bunch	0	8	0
Lettuce.....	doz.	1	0	1	Vegetable Marrows.....	0	0	0	0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	JANUARY 22—28, 1874.	Average Tempera- ture near London.			Rain in 43 years	Sun Rises		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.		Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.		m.	h.		
22	Th	Meeting of Royal Society, 8.30 p.m.	49.1	32.3	37.7	18	54	af 7	14	10	10	10	4	11	54	22
23	F	Length of day 8h. 38m.	42.6	32.4	37.5	18	53	7	31	4	28	10	5	12	10	23
24	S	Boccaccio born, 1633.	43.1	32.1	37.6	19	52	7	33	4	42	10	6	12	24	24
25	SUN	3 SUNDAY AFTER EPIPHANY. [7 p.m.]	43.4	32.3	37.9	21	51	7	34	4	59	10	7	12	25	25
26	M	Anniversary Meeting of Entomological Society.	45.5	32.3	38.9	20	49	7	36	4	19	11	8	12	51	26
27	Tu	Meeting of Institute of Civil Engineers, 8 p.m.	44.6	31.2	37.9	20	48	7	38	4	46	11	9	13	3	27
28	W	Meeting of Society of Arts, 8 p.m.	45.8	30.8	38.3	21	47	7	40	4	after.		4	5	10	28

From observations taken near London during forty-three years, the average day temperature of the week is 44.0°; and its night temperature 31.9°. The greatest heat was 56°, on the 25th, 1845, and 27th, 1861; and the lowest cold 15°, on the 25th and 27th, 1855. The greatest fall of rain was 0.99 inch.

## THE POTATO DISEASE.



UPON my mind the impression produced by the perusal of the paper on this subject in connection with Earl Cathcart's prize was one of surprise and disappointment. That ninety-four essayists should prove to be a set of mere theorists, and nothing more, upon such a subject, is perfectly astounding. What are those of us about who claim to be practical men? Suppose we try to bring the total up to a hundred by means of a few papers in the Journal, and see if the plain clear teachings of actual practice do not prove so solid and weighty as to more than counterbalance the light superficial evidence of mere assertion.

The Potato disease is a stern reality, a decided and an accepted fact, and in seeking for the best means where-with to combat its evils it appears to me that there are only two points upon which to base our calculations, and these are—1, The disease can be cured; 2, The disease cannot be cured. To the first I answer without the slightest hesitation—Wrong; and to the second—Right; for I am convinced that more good would be done, and much waste of time and money avoided, if, instead of seeking for an actual remedy, or trying to get rid altogether of the disease, the attention of the investigators were directed to superior means of culture; to the selection of sorts of rapid growth, early maturity, and which, besides keeping sound and good till new Potatoes are abundant, shall also continue in excellent condition for culinary purposes from the time of lifting in August till the following June, or about ten months. This is no impossible novelty—no crude theory, but is already a reality. We have not even to seek for or to raise varieties possessing such desirable qualities, having more than one of such already in our hands, and the variety which may be taken as a type is that fine Potato Paterson's Victoria.

Blight-proof Potatoes are a fallacy. It is true enough that certain kinds yield more slowly than others to the attacks of the disease, but it is equally true that all kinds, new and old, succumb, without exception, to it. It is not my purpose to indulge in hostile expressions respecting any nursery or seed firm, but I must not refrain from stating that so-called blight-proof sorts have been procured direct from the raisers, and failed in every instance to justify them in offering such kinds to the public as disease-proof. I shall indeed be greatly surprised if any one be found who will venture to submit any of the varieties said to possess this merit to such a crucial test as the Royal Agricultural Society's Judges very wisely recommend, being convinced that the trials will serve only to establish the truth of what is already a recognised fact with most practical men—namely, that no Potato is disease-proof.

When the Fluke Kidney was first sent out it was supposed that, besides the excellent qualities which rendered it superior to all late-keeping sorts of that day, it possessed

the extraordinary merit of being blight-proof. I was serving under my father at the Earl of Romney's at that time, and retain a lively remembrance of the excitement which it caused, how eagerly it was watched, and how great the disappointment proved when it failed to answer our expectations. Well, this sort of thing has been going on ever since, and I have had most of the later introductions through my hands with invariably the same results; and no later than the past season I was tempted to procure a variety not altogether a new one, but which had repeatedly been brought before the public as a blight-proof sort. The result was really curious, for it proved to be the only kind that suffered much from blight, quite a third of its tubers being affected!

Upon examination of what are asserted to be the causes of disease, two only appear to me to afford matter for profitable discussion. The first, and perhaps the most important on the list, is "Degeneration of the tuber," and the remedy recommended is the use of new sorts for planting. If one could accept the proposition that degeneration of the tuber is the cause of disease, would not the question immediately arise, How can so costly a remedy be applicable in the case of those who grow Potatoes for the markets? It would, I think, be found altogether impracticable for commercial purposes. What would the Potato-farmers of Lincolnshire say if they were invited to discard their standard sorts, and to invest capital in the purchase of comparatively untried varieties?

Now, degeneration of the tuber whenever it occurs almost always arises from the improper treatment of the seed, and the recurrence of such an evil may, therefore, easily be avoided. If seed Potatoes are heaped together in large quantities, and suffered to remain so during winter, and to put forth long weakly sprouts, the loss of tissue and stamina must be very considerable, as is clearly evinced in the weakly uncertain growth, and frequent failure to grow at all, so often seen. The remedy for such faulty practice is obvious. As each crop is lifted, select the seed with care, spread it thinly in the store-house, examine it frequently, and before there is any risk of sprouting put the whole of them in single layers on end, side by side, eyes upwards, upon trays or shelves. Do not plant before the soil is in good condition, then carry the seed to the drills, and plant so carefully that the short, thick, sturdy sprouts, with which the tubers will then be bristling, sustain no damage. Stir the soil well between the rows, earth-up slightly, and the quick even growth, but more especially the great produce and early maturity of the crop which will certainly follow if the kinds be well selected, will afford such ample remuneration for this careful tending as to convince the most sceptical of its value and importance, not only for gardens, but for the most extensive system of field-culture. I have applied this method of preparing the seed in my own practice for several seasons, and am so thoroughly convinced of its importance, as to very safely venture to assert that, combined with skilful timely culture and promptitude in taking up the crop, it enables one not only to escape the attacks of disease, but to obtain a mean

product of nearly double the bulk of that of the principal Potato districts in the past season.

This brings me to the other given cause of disease—wet weather and generally superabundant moisture. There can be no doubt that this is the primary cause of disease, and none of the methods of prevention given are of the slightest use as a preventive. It is an evil which we may avoid, but we cannot grapple with successfully if we wait its coming. The time when the crop first sustains damage from a superabundance of moisture is generally about the last week in August, sometimes a little earlier; but by cultivating those kinds only which have been very aptly termed “early-ripeners, late-keepers,” the entire crop is always matured, lifted, and stored securely before the fatal rains occur. It is notorious that disease was generally very prevalent last autumn, increasing in virulence as the season advanced. By pursuing the method of culture which I advocate I was enabled to lift and convey to the storehouse the whole of the main crop in excellent condition by the evening of August 16th; thus saving it from the effects of the unkindly weather which so quickly followed. The valuable and interesting reports from all parts of the country of the condition of the Potato crop, which were published in the Journal in August and September, showed clearly what complete success attends intelligent culture wherever it is followed. From Dorsetshire, Worcestershire, Hampshire, Essex, and Sussex the crops were reported to be in the storehouse on the 28th of August sound in condition and excellent in quality. Long after this—late in October—Potatoes were being taken up even along the south coast, and they were, of course, badly diseased. Can it possibly be necessary to point the moral?—EDWARD LUCKHURST.

#### NOTES BY THE WAY.

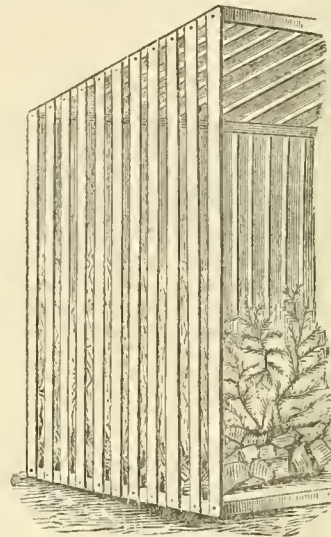
WHEN I left London on the second day of this new year on a search for health in the favoured climes of the “sunny south,” the thermometer stood at 50° F., the birds were singing as if it was spring, and the rooks, mistaking the unusual season, had begun to build. My first rest was at Boulogne, and the weather now became cold and wet, so that when I reached Paris the great thermometer in the court of the Hotel du Louvre registered 42° F. The next morning the streets of Paris were bound with frost, and I was glad to hasten from a state of things which I had already endeavoured to avoid at home. The sun was powerful about Paris, and the days were warm and spring-like, though the mornings were frosty; but by the time I reached the rich region of the Côte d’Or the little hills and vineyards were covered with snow, and on arriving at Dijon I found the ancient capital of Burgundy bound hard in a black frost.

I merely mention these facts for the information of those of your readers whose ideas may hitherto have been at variance with them, and who think that the farther south they go the warmer it becomes. I only wish it had been so in my experience. At Dijon my stay was short, on account of the cold, though there is much to be seen in that interesting old city. But it was not the wars and strifes of the Dukes of Burgundy, the historical edifices, nor the *crus* of the Côte d’Or (and they are very choice), which had their attractions for me. I rather, notwithstanding the ungardening time of the year, turned my attention in that direction to search out what I could find.

There is at Dijon an academy composed of a faculty of Literature, one of Science, and one of Law; a school of medicine and surgery, a hospital, and a school of art. In connection with this there is also a botanic garden, situated on the opposite side of the railway from the town, of which Dr. Laguessee is the Director, and M. Weber is the Curator. It is a small affair of from 3 to 4 acres, but it contains a very good collection of herbaceous plants, arranged upon the system of De Candolle, and all very carefully labelled. The labels are worth imitating in our own botanic gardens. They are small square plates of iron, raised on a long iron stem 2½ feet high from the ground, so that the name is brought near the eye, and feeble backs and stiff knees are not distressed by having to stoop close to the ground to read the name, as is too frequently the case in public gardens. Some idea of the extent of the collection may be formed when, by way of test, I counted the number of species of Clematis, and found there were eighteen. I believe the garden contains five thousand species in all.

In the corner of the garden is a piece of ground raised arti-

ficially to represent a small hill, and on this is planted a collection of Vines, extending to three hundred varieties, consisting chiefly of those employed in the various wine-growing districts of France. I remarked in this garden an ingenious contrivance to enable them to grow Ferns in a situation where shade could not be obtained, and where, in a country like this, in which the summers are so hot, shade is more essentially necessary. It consisted of a shelter covered with laths, placed about half an inch apart, effectually shading the plants, at the same time light and rain are not excluded. I cannot do better than supply you with a sketch of it, which will convey more vividly the thing to the mind. It is 5 feet 6 inches high in front, and 4 feet at the back, and the width is 2 feet



Fern Shelter.

3 inches. The laths are about an inch wide, and half an inch to five-eighths apart. Those at home who are troubled to procure shade for those plants that require it may take a hint from the garden at Dijon, and, perhaps, improve upon the suggestion. A small stream runs through the garden, on which some sagacious-looking old swans alternate their movements with the garden, where they march in a stately line, regarding on either side the possibility of securing a slug or a worm.

It is not only as a botanic garden that this establishment is kept up. Gardening and botany appear to go hand-in-hand here, as they ought to do everywhere else; the one being the helpmate of the other. There is here a collection of fruit trees, illustrating all the forms of pruning and training, for which French arboriculturists are famous. There are wire trellises 10 or 12 feet high, and single, double, treble, and palmate cordons trained to them. There are pyramids of the ordinary kind, and others of fantastic shapes. There are goblets of various forms, and all are admirably managed. At the entrance-gate we were informed by a large placard that M. Weber gives demonstrations in arboriculture, while Dr. Laguessee does the same in botany. It appeared to me remarkable that while such things could be done in a departmental garden in France, there is not in all Great Britain a place where demonstrations in arboriculture can be obtained, notwithstanding the importance of the subject to British landowners. There is something still wanting in our educational system, and it is to be feared that in our solicitude for primary schools, our educational boards forget the middle class and the technical education of the people. I hope the day is not far distant when we shall have departmental technical schools among us, where the higher economics of botany and horticulture will be properly taught.

In the garden at Dijon there is a fine hedge of Thuja (Biota) orientalis, the Chinese Arbor-Vitæ, which is 20 feet high. I think from the upright habit of the tree and its dark green foliage it is the variety which I used to know long ago as tatarica, quite distinct in habit from the normal form of orientalis. But whichever it is, it makes an admirable fence,

a far superior one to the American Arbor-Vitæ, *T. occidentalis*, much more dense, and of a brighter and richer green.

Finding the country all round covered with snow, and the earth bound in a hard frost, I was glad to hasten on to Lyons, in hopes that a change for the better would be got. I found Lyons enveloped in a fog as dense, if not quite so yellow, as some of those we experience about London, and for four days this had been the case. It cleared away, however, and was followed by as hard a frost as that I left behind me at Dijon. The sun was bright, however, in the middle of the day, and the picturesque scenery of this fine city was lit up as if it was summer. I had no time to see any of the gardens here, nor would it have been much use if I had, for there is little now to be seen. I paid a visit to that enthusiastic amateur M. Jean Sisley, who received me cordially in his fine Franco-English manner. I found him busy sowing seed of Zonal Geraniums, from which he expects, no doubt, to raise varieties which will some day make themselves widely known.

In the flower market at Lyons there was not a great deal to be seen. The great thing of the season appeared to be small Spruce Firs, with the dyed flowers of *Xeranthemum annuum* tied to the tips of the branches.

There is one thing I remarked at Lyons, and which I found to prevail all the way southwards, and that is the mode in which horses are partially clipped. It is not a gardening subject, but it may have interest for many of the readers of these lines. In England I noticed before I left that the omnibus horses in London and working horses in the country are clipped all over their belly and legs, the long hair being left on the sides and back. Here the back and sides are clipped, and the belly and legs left with the natural covering; and this appears to me the more sensible way, for a cloth is put over the back, and the belly and legs are naturally protected by the hair, whereas in the case of English horses the legs and belly are exposed to the rigours of all weathers without any means of protecting them. It would not be very convenient to put long stockings on horses, and this appears to have suggested itself to the French, who preserve the natural covering.—R., Mentone.

### ESTIMATE OF GRAPES.

I HEARTILY agree with Mr. Luckhurst in what he says about Black Alicante Grape. With us here it promises to keep quite as long as Lady Downe's, growing by its side, and, as Mr. Luckhurst says, the bunches are much better. With regard to Mrs. Pince's Black Muscat, I am afraid that there is more than one variety of this fine late Grape. I have now met with what I take to be the true variety in three different places, and in every case the fine-proportioned bunches, thickly set with full-sized berries, and of good finish, were everything that could be desired. Now we have here two plants of Mrs. Pince; one (the true one) is planted in an intermediate house along with Hamburgs, Foster's White Seedling, &c., where, notwithstanding the disadvantage of its ripening so much later than those sorts, it has done pretty well, with the exception of two or three bunches at the bottom of the rafters, which seemed to have set rather imperfectly, but the colour was fair. I think it a great mistake to plant this Vine along with early sorts. It thrives well enough under cool treatment as far as the health of the Vine is concerned, but its fruit requires the same length of time and temperature as Muscats to ripen it fully. It cannot be denied that it will ripen under ordinary treatment with other sorts, but then while trying to ripen it mischief is very often done to those which are ripe before Mrs. Pince is much changed in colour. The other Vine referred to is planted in the late house along with White Tokay, Black Alicante, and Lady Downe's. The Vine is as vigorous, if not more so, than that in the intermediate house; the leaves, too, are quite in character with the other; the bunches are more broadly shouldered—in fact, they are quite as broad as they are long; the berries are much of the same substance, but irregular in size, the footstalks have not that stout robust appearance which is its character, and the colour is very poor. I also find the bunches are shanking, the footstalks of all the smaller berries are shrivelled-up, and the berries themselves are now (16th January) beginning to shrivel.

Has Mr. Luckhurst observed any difference between the Vines of Mrs. Pince which he has and those he has seen when from home? I hope my case may be a solitary one, but the various opinions about the quality of this Grape almost convince me that there may be something in there being two sorts;

and if so it would be well for those who have not succeeded with it to communicate with their friends who have, and see that they have the same sorts. Our two Vines were both planted at the same time and in the same border, so that difference of situation can have nothing to do with this case.

While on this subject I will say a few words about the mode of allowing Vines to grow to the extraordinary length of 25 feet in one season. I cannot see the utility of allowing a Vine to grow to such a length, and then at pruning time cutting-off 16 or 18 feet of the best of the canes. I say the best of the canes, for I have always found that the best wood and buds are to be found just below where the canes have been stopped, and where side shoots have pushed to a considerable length, providing the wood is thoroughly ripened. My method is to stop the canes a short distance above the place to which they are likely to be pruned-back, and encourage all the eyes on the young canes to break, train the resulting shoots in the usual way to occupy all the space, stopping only to prevent crowding. This I have practised for five years, and I find that fine fruiting eyes are produced at the base of the side shoots (just such as are so often cut away), and always well ripened. Some four years ago our Editors thought fit to publish a few remarks of mine on this subject with their own ideas, from which I profited, but I was sorry this failed to draw any discussion. In September, 1872, I, with a friend, paid a visit to Lambton Castle, about the time of the Glasgow Show, and saw those fine Grapes of Mr. Hunter's, and my heart leaped when I saw the side shoots trained along the wires like Pear trees on a wall, and at their base those very buds that would produce the 14-lbs. Hamburgs.—R. INGLIS.

### MUSHROOM HOUSE AND MANAGEMENT.

I AM frequently asked by amateurs how to grow Mushrooms, and having had a large share of success for many years, perhaps a few notes descriptive of my method may be acceptable to some of your readers.

The house should have a north aspect, in which case you may grow Mushrooms nearly all the year round; and the roof, of whatever material it may be, should be ceiled, as its being so tends to keep the temperature more uniform. The heating medium should be hot-water pipes or a brick flue.

The beds, or shelves, ought to be arranged as conveniently as possible; I prefer them of wood, 1 foot deep and 3 feet wide. I usually commence forcing about the first week in September. Horse droppings are collected every morning from the stables and placed under cover, and when I have enough for a bed I make it up at once, mixing with the droppings one barrowful of loam to six of droppings. The bed should be made quite firm. As soon as the heat begins to rise I make holes with a dibber 8 inches apart over the whole bed. In three or four days the heat will begin to decline; when it is about 75° the bed is ready to spawn. It is then covered with 1 inch of loam and beaten quite smooth, and a moderate covering of hay placed upon it. In four or five weeks the greater portion of the hay may be removed, leaving just sufficient to cover the surface. I never water the bed, but if the hay feels dry a very slight dewing-over is given it. In six weeks the Mushrooms will begin to appear, and will continue producing for about three months. Successional beds should be made-up according to the requirements.—THOS. PROSSER.

### CULTURE OF CHEILANTHES ELEGANS.

THIS is one of the most beautiful of Ferns and yet often in collections it is in a miserable condition—in fact, struggling for life in a temperature and atmosphere quite uncongenial to its health. To those, therefore, who have not succeeded in the culture of this Fern I offer a few remarks, which, if attended to, will insure success and gratification.

We will suppose you have a young plant in a 5-inch pot in the spring. First turn it out of the pot, and examine if this is full of roots; if so, it will require a shift into a clean pot two sizes larger, which will be a 7-inch pot. Drain this well, and put a little moss on the top of the drainage; then prepare a compost of three parts peat and one of light turfy loam, and add as much silver sand as will give the whole a sandy appearance. If you add to this a little charcoal or charcoal-dust, to keep the whole sweet, you will have a mixture that almost all Ferns will luxuriate in. Pot the plant firmly in this soil. If you have only a small greenhouse, you can grow it to perfection.

The great mistake made by many in managing this Fern is

placing it in a close moist atmosphere and using the syringe freely. Under this treatment it will not succeed. But give it a greenhouse temperature, a gentle circulation of air, and water when it requires it, but not wetting the fronds, and you will be gratified by seeing frond after frond rising and developing themselves into beauty.—J. ANDERSON, *Hill Grove, Kidderminster.*

## A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 17.

### DENDROBIUM.

As I have before remarked, this is purely an eastern genus, the various members of which conform to block and basket culture perhaps better than most others, although I prefer pot culture for some of those which make stout heavy pseudobulbs. The species enumerated in the sixth article of my "Century" were all kinds adapted to cool treatment, and I was much gratified to receive a letter from a most enthusiastic lover of plants who resides in Surrey, not fifty miles from London Bridge, informing me that his plant of *Dendrobium speciosum* had this season produced him three spikes of flower for the first time, and that he believed it was brought about by following the open-air treatment recommended by me. This, then, is satisfactory to him, and it is also satisfactory to me, inasmuch as I have enlisted him in the ranks of cool Orchid-growers, and I am sure this is the surest way to dispel the erroneous notions which some will still entertain respecting the difficulty attending their culture. Depend upon it, readers, if you love a plant you can grow it, because you will leave nothing untried which is likely to conduce to its well-being; and let me add, if you do not love plants it is quite useless to expect to be successful with anything but weeds, and they will grow up without love or without care, for few people who are not enthusiastic lovers of plants can imagine how much beauty and how much pleasure can be stowed away in one little greenhouse, or even a frame. It can only be compared to the "Turkish delight" which my boys buy sometimes in lumps, and I have seen so many gems brought out of a little house scarcely large enough to turn round in, that one would almost imagine the lumps must be closely packed too. However, this is rambling from my subject, so I will just ask you to refer back to page 264, of March, 1873, and all requisite information respecting soil, &c., will be found.

**D. CAMBRIDGEANUM.**—This is sometimes grown under the name of *D. ochraceum*, which, however, is not at all applicable to the plant. It thrives admirably upon a block of wood, the pseudobulbs attaining a length of from 4 to 12 inches. The flowers are produced upon the young unripened growth, and are very attractive; the sepals and petals are bright orange-yellow in colour, and thick in texture; the lip is of the same colour, but is ornamented with a large heavy blotch of deep crimson about the centre. It usually flowers in the spring of the year. Native of the Khasia Mountains.

**D. DEVONIANUM.**—I am utterly at a loss to find words to depict the charming and elegant flowers which adorn the pseudobulbs of this species during the months of May and June. The growths are pendulous, from 1 to 3 feet in length, or even more, but very slender, and it should always be grown either in a basket or upon a block. The flowers are both numerous and large, measuring about 2 inches in diameter; sepals and petals waxy-white shaded with pink, the petals being tipped with deep rosy purple; lip large, broadly heart-shaped, and of the same colour as the sepals, but margined with rich rosy purple, and stained with two large bright orange spots, whilst the outer edge is beautifully set-off with a deep fringe or frill. It enjoys a very moist atmosphere when growing.

**D. LITULIFLORUM.**—This is another superb plant, which should be grown in a basket, as the terete pseudobulbs are pendulous, and from 1 to 3 and 4 feet in length, and these when laden with its splendid flowers have a truly gorgeous appearance. It requires an abundant supply of water in the growing season, but during winter only just sufficient to prevent the growth from shrivelling. The flowers are freely produced, and are large and handsome; sepals and petals rich soft purple; lip large, white margined with dark purple. Unfortunately this fine species remains rare, and is consequently rather higher in price than some of the other kinds. It usually blooms about April, and lasts two or three weeks in beauty. Native of Assam.

**D. TORTILE ROSEUM.**—An erect-habited plant, which should be grown in a pot. It is generally considered a difficult plant

to manage satisfactorily, because it is forgotten that although it is a native of the island of Java, high mountains are to be found there as well as on the mainland of India, and that the plant occurs at considerable elevations. The pseudobulbs grow from 1 to 2 feet in height, and somewhat resemble *D. nobile* in appearance. The flowers are freely produced during May and June; the sepals and petals are slightly twisted, and soft rose in colour, whilst the lip is primrose yellow tinged with rose. It is a great favourite with me, but latterly seems to have lost some favour with amateurs, probably from the cause already named.

**D. AGGREGATUM MAJUS.**—A dwarf-growing plant, which should be grown upon a block of wood. The pseudobulbs are light green, and bear a small, dark green coriaceous leaf. Scape short, bearing a few medium-sized, soft yellow flowers. It is a very free-flowering and pretty species, which should find accommodation in every amateur's collection. Native of the cooler parts of India.

**D. CHRYSOTIS.**—A species of somewhat recent introduction, and extremely beautiful. The stem-like pseudobulbs are slender, and attain a height of from 2 to 3 feet, or even more. The leaves are bright green, and saving the fact of its blooming when the leaves are upon the stems, the habit resembles that of *D. fimbriatum*. The whole flower is of a rich apricot yellow; the edge of the lip is beautifully fringed, and it has also two blotches of deep blackish purple on the lip. It should be grown in a pot. Native of Assam.

**D. WARDIANUM.**—Tastes differ much, some preferring one particular style of beauty and some another; indeed, it is well Nature has so constituted us. To me this species of *Dendrobium* stands quite at the head of the list. It should be grown in a basket, for it makes long pendulous pseudobulbs, with thickened nodes some 3 feet in length when vigorous. The flowers are very large, measuring between 3 and 4 inches across; sepals and petals waxy-white, the apices being tipped with rich magenta; lip large (destitute of the beautiful fringe which is such a marked feature in *D. Devonianum*), deep orange, with two large crimson-purple blotches. Its season of flowering is during April and May, and the blooms last a considerable time in perfection owing to their great substance. Unfortunately it still continues somewhat rare, but from my partiality for it I have been constrained to include it in this enumeration. Native of Assam.—EXPERTO CREDE.

## THE ACACIA AND FREEMASONS.

SOME weeks ago an inquiry appeared in *THE JOURNAL OF HORTICULTURE* as to what species of *Acacia* was held in esteem by Freemasons. The question was transferred to *Notes and Queries*, and has elicited the following reply—

"In the old work in my possession which has been once or twice quoted from in *Notes and Queries*—viz., '*Les Plus Secrets Mystères des Hautes Grades de la Maçonnerie Dévoilés*,' I find at page 9 of the preface the following passage—'*L'Acacia, si renommée dans la Maîtrise, est pour rappeler la mémoire de la Croix du Sauveur du Monde, parce qu'elle fut fait de ce bois, dont la Palestine est remplie. C'est la raison pourquoi le Bijou du Grand Maître est tel qu'il est ici tracé*, fig. 4.'

"The *Acacia* alluded to will, I suppose, be the common *Lecust* tree about which Cobbett used to write. It is abundant in Palestine. The fig. 4 alluded to in the extract above is a mere representation of the 'bijou.' In its centre is a Calvary cross, but the *Acacia* is not apparent, as might be supposed from the reference. The artist intends us probably to imagine that the cross is one made of the *Acacia* tree. In Germany the avenues to the Catholic churches are generally formed of *Lecust* trees, and I have heard it stated as a reason that the cross was made of an *Acacia*. The German avenues are always of the common *Lecust* tree.—JAMES HENRY DIXON."

As a matter of fact, the so-called *Acacia* of gardens is not a member of that genus, but a *Robinia* (*R. pseudo-Acacia*); moreover, it is not a native of Palestine, but of North America.—J. B. Q.

**WINTER-BLOOMING RHODODENDRON.**—It may be interesting to the lovers of that best of all evergreen shrubs, the *Rhododendron*, to hear of a specimen new in bloom in my garden, of *R. lanceifolium*. It is about 16 feet high, 50 feet in diameter of branches, and has now expanded, or nearly so, upwards of four hundred splendid scarlet trusses of flower. The brilliancy of its colour, the admirable shape of its blossoms, and the way in which the foliage falls down about the truss so as to set it off to the best advantage, render this the most beautiful

Rhododendron I ever saw in this kingdom. I live in a remote region of the north of Ireland.—JOHN R. BOYD, *Ballymacool, Co. Donegal*.

### GROS GUILLAUME A KEEPING GRAPE.

My vinery is very small, and I have few kinds of Grapes, and am, therefore, not qualified to speak from extensive experience of the keeping qualities of various kinds. Nevertheless, I cannot withhold my testimony to the superiority of Gros Guillaume (Black Barbarossa), amongst all that have come under my notice. I have just tasted a cluster cut in the beginning of October attached to a small piece of the wood and hung-up in a dry garret, but without the advantage of being in a bottle, and find the flavour most excellent. The berries are a little shrunk, but not much, and the abundance of saccharine juice has made them very like fine raisins, but with a peculiar high aroma. I hope this Grape, which was for a long time under a cloud, will now be better understood and appreciated. In my opinion it should not be sent to the table early, but either kept on the Vine, or, if cut, allowed to hang in a dry room for some time till the flavour is fully developed. I must confess, however, that with me this Grape is not very prolific.—JOHN FERME.

### NOTES ON THE SEASON AND ITS EFFECTS.

MILD as the autumn has been, and for so long a period too, it is many years since the common Primrose was in so backward a state as it is now, and the same remark applies to the Laurustinus; both in 1871 and 1872 this shrub was in full bloom early in December, the fully-expanded flowers being in such numbers as to give the whole plant a white appearance. Our sharpest frost for the year was on December 29th, but it speedily gave way to milder weather, and at the time I write (January 13th) there have been no signs of winter yet; still there is very little advance in the buds of deciduous trees, only such plants as Clematises and Honeysuckles that bud early having made any progress, and it is well they are so backward; but, as we expect a prolonged period of mild weather to hasten on such things, I am a little puzzled that Roses have not commenced growing. Winter-blooming plants, as Hellebore, the Snowdrop, Laurustinus, Garrya elliptica, and Primroses, are later rather than earlier. Few of the single white Primroses are yet in full bloom, though they are often so early in November. The same may be said of the wild Primroses, and Snowdrops are no further advanced than when they were covered for some weeks with snow. It would almost appear as if Nature were keeping everything back this season, the better to escape the rigour of a late winter.

In the case of the Laurustinus I cannot but connect its lateness with the season that is past, and in so doing I will glance at the meteorology of last year. The winter, on the whole, was mild, and the spring, up to the end of April, gave promise of being early; but May was a dull cold month, and the same may be said of June up to the last week, which was fine. June was also wet, and the two previous months having been dry, the rain that fell then assisted all the coarser kinds of vegetation, and grass and hay were abundant, as well as many kinds of vegetables, but summer could not fairly be said to have set-in till the middle of July. After that there was but little fault to be found with the season, as August was a fine month, and all the rain that fell in September and October was needed. November and December were very mild, the latter month also so dry that no measurable quantity of rain fell the first fourteen days, and the roads were dusty. Now, in the case of a shrub like the Laurustinus, the growth of which takes place early in the season, I imagine that the cold weather we experienced in May and June tells at the present time in their backward condition as to blooming, and possibly the same may be the case with the Primrose and other plants. Their growth being protracted, it is probable that their resting period must be so too, hence the lateness of their blooming. I hardly know on what other principle to account for their backward state.

Assuming the cause assigned to be correct, I have no reason to doubt but that a good bloom will be in time produced; most plants look well, and, being late, are not likely to be injured by the inclement weather. Still I am not sure that a mild winter is to be desired, excepting on some accounts, for the ground rarely works well afterwards, and a late spring often follows.

Although the season has been mild and the autumn dry, there have been drier years—viz., in 1855, 1858, 1862, 1863, and 1870; and even as regards frost, I find the minimum thermometer fell lower last year than it ever did in 1863 or 1872. There were several summers in which hotter days occurred. The sharp frosts in spring did much harm to the fruit crop, and a bad planting-out time to the flower garden; but the prolonged summer made amends for the latter, and if fruit was less plentiful than could be wished, in most cases it was good, and Apples certainly keep well. Complaints have been made of Pears not doing so, but there have been seasons when they have been worse. The great drawback seems to be the bad condition of the Potatoes. On the other hand, all the Cabbage and Broccoli tribe seem to have benefited by the mild autumn, and for them a gradual approach to winter would be better than a sudden one, as they are very succulent and tender.

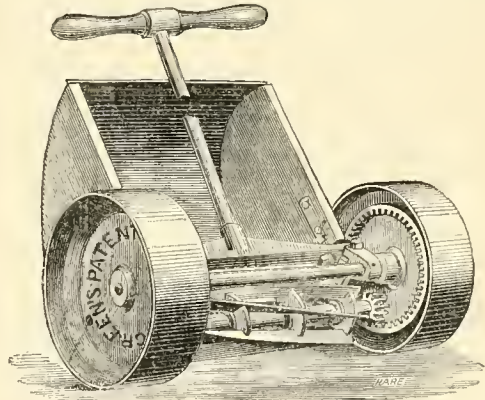
Subjoined is the rainfall of the past year compared with previous ones, also the number of rainy and frosty days.

Months of 1873.	Total Rainfall.	No. of Rainy Days.	No. of Frosty Days.
January .....	2.69	21	11
February .....	2.24	13	24
March .....	1.66	15	9
April .....	0.81	15	4
May .....	0.97	12	2
June .....	3.70	13	—
July .....	1.60	9	—
August .....	2.13	15	—
September .....	2.69	14	—
October .....	3.51	18	9
November .....	1.73	17	4
December .....	0.46	7	10
Total .....	23.99	169	73
" 1872 .....	39.10	215	52
" 1871 .....	25.12	167	63
" 1870 .....	21.09	152	92
Average of preceding fifteen years..	26.54	163	81

—J. ROBSON, *Linton Park*.

### GREEN'S PATENT GUINEA LAWN-MOWER.

We are informed that it is composed of the smallest number of parts of any other lawn-mower. The framework is cast



all in one piece, and therefore is not liable to be twisted or by any means to get out of order. The cutters are fitted in the cylinder without wedging or wiring, and yet they are so firmly fixed that they cannot be shaken or in any way become loose. The fixings or caps of the cylinder are fitted together by two bolts and two screws only, and the cylinder itself can be adjusted or removed by the most inexperienced person in two or three minutes. The motive power is given by the travelling wheels, into which a pinion fixed on the end of the cylinder-shaft is geared, giving revolving motion to the cutters. It will cut either short, long, wet, or dry grass, bents, &c. The grass-box is fixed behind the cutters, so that the machine will cut grass close up to trees, seats, walls, and underneath shrubs without the box having to be removed. It is eminently adapted for banks, slopes, flats, &c. The handle

of the machine will suit the height of the person using it at any angle.

## ROYAL HORTICULTURAL SOCIETY.

JANUARY 21st.

Among the alterations in the new schedule of the Society's Shows is the abandonment of a number of the minor exhibitions held in conjunction with the Committee meetings, the subjects brought forward at the latter often forming a show of themselves. Unfortunately on this occasion, from whatever cause, there was scarcely anything exhibited; let us hope that the future meetings will present a greater degree of interest after the Annual General Meeting, when it may be anticipated that the state of the ferment in which the Society at present is shall have subsided.

**FRUIT COMMITTEE.**—A. Smee, Esq., F.R.S., in the chair. There were very few subjects brought before the Committee. Mr. E. Bennett, gardener to the Marquis of Salisbury, Hatfield, Hert's, sent specimens of fruit of *Psidium Cattleianum* (Cattley's Guava); the plants had been grown in the open air during summer and autumn, and the fruit ripened in a coolinery. The flavour was very indifferent. He also sent a dish of Early Prolific Tomato, which had been grown in a coolinery; the fruit was well kept. With these came a dish of pods of *Tacsonia Van-Volxemi*, which are edible, but the flavour is not agreeable. G. F. Wilson, Esq., of Heatherbank, Weybridge, sent specimens of Newtown Pippin Apple from a pot tree; the fruit was well coloured, handsome in shape, and of excellent flavour. Messrs. Masters & Kinmont, nurserymen, Canterbury, sent seedling Apple Duchess of Edinburgh. Two dishes of Potatoes were sent by Mr. R. Dean, seedman, Ealing—viz., Extra Early Vermont and Brownell's Vermont Beauty, two excellent American sorts certificated at Chiswick last year.

**FLORAL COMMITTEE.**—R. B. Postans, Esq., in the chair. Messrs. Standish & Co., Ascot, sent two dozen potsful of Lily of the Valley, excellently bloomed, and for this early season quite notable. From G. F. Wilson, Esq., Heatherbank, Weybridge Heath, came a very large-flowered *Cineraria*, which had no other recommendation beyond its colour. Mr. Denning, gardener to Lord Lonsborough, Norbiton, sent *Odontoglossum angustatum*, by no means remarkable; the flowers small, pale creamy yellow, spotted with brown, the lip purplish at the base. Mr. W. Paul, of Waltham Cross, exhibited two stands of Camellias, in which *Lavinia Maggi*, *Ulaute*, *Elegans*, *Donkelaari*, *Conspicua*, *Fimbriata*, and *Albaplena* were conspicuous. From Messrs. Dobson & Sons, Isleworth, came an excellent group of *Primula sinensis fimbriata* of the red and white-flowered varieties. Mr. R. Dean, Ealing and Bedford, sent white bedding *Viola White Swan*, grown in a cold frame. This is a seedling from *Viola lutea grandiflora*, and is stated to be the earliest flowering of all the bedding *Violas*. A pretty little pan of *Primrosea* was also shown by the same exhibitor, and in this Violet Gem and Rosy Morn were especially pleasing. The only first-class certificate awarded was to Messrs. Veitch for *Cypripedium Roezlii* with a yellow slipper, with the sepals and petals veined with purple, giving the flower a lively appearance, which will render it a favourite.

## CONTINUANCE OF EUCHARIS AMAZONICA IN BLOOM.

In your No. 630 of April 24th, 1873, you published an account of the treatment followed here for many years in the cultivation of *Eucharis amazonica*, and the result as indicated by the period of blooming, showing a total of 314 days out of 366 in the previous year. The following is the result of the year just passed:—

Days in flower, January	31	Days in flower, July	17
" February	28	" August	27
" March	21	" September	30
" April	30	" October	31
" May	31	" November	30
" June	21	" December	31
Total—328 days in flower out of 365.			

—JOHN SAYERS, Gardener to Thomas Bewley, Esq., Rockville, Blackrock, Co. Dublin.

**MR. MICHOLLS' COLLECTION OF PLANTS.**—We regret to learn that the collection of magnificent specimen stove and greenhouse plants belonging to H. Micholls, Esq., of Southgate—which have caused such a sensation wherever exhibited by his highly-skilled gardener, Mr. Thomas Baines, which have been in fact the heroes of a hundred fights—is to be dispersed this

spring, in consequence of the proprietor being about to remove to a west-end mansion.

## CINERARIA CULTURE.

I USUALLY make the first sowing at the beginning of March, and as soon as the seedlings appear they are placed very close to the glass in a cool house. The principal object to be borne in mind is good robust plants. The compost should be fibry loam, silver sand, and old decayed cow dung. Place the cow dung in a shovel over a fire long enough to kill worms, and then powder it up. Never place the seedlings on the north side of a hedge, but plunge the pots in ashes up to the rim in a pit facing the north. They can be successfully grown in a pit facing south, in the full heat of the summer sun, by every morning drawing-on the lights, and whitewashing them for shade, and in the evening drawing them off. *Cinerarias* love the dew during their growth. I use blood diluted with water. No liquid manure that I have ever used has afforded such good results. The plants are liable to be mildewed. To stop it place good-sized lumps of lime, newly burnt, here and there about the pit.

The *Cineraria* is one of the best winter-blooming plants when well-grown robust plants are produced.—F. P. LUCKHURST.

## PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

**STUDNERA COLOCASIEFOLIA.** *Nat. ord.*, Aroidæ. *Linn.*, Monœcia Polyandria.—Native of South America. Spathe yellow, throat purplish. "Mr. Bull believes that he received his specimen from Calcutta, but it is certainly not an Indian form. It belongs to Schott's section or tribe of *Asterostigmæ*, and its allies are for the most part American; it, however, closely resembles in the form and colouring of the foliage a very ornamental Aroid (*Colocasia Jenningsii*), which I found in the Khasia mountains. The specimen here figured flowered in Mr. Bull's nursery in May, 1873."—(*Ibid.*, t. 6076.)

**MESEMBRYANTHEMUM TRUNCATELLUM.** *Nat. ord.*, Ficoideæ. *Linn.*, Icosandria Di-pentagynia.—Native of South Africa. Flowers yellow. "M. truncatellum was introduced into Kew in 1795 by F. Masson, one of the travellers attached to the establishment, and is described as flowering in November; our plant was sent by Principal MacOwan, of Gill College, Somerset East, and flowered in October, 1873; it is a very rare species, was unknown to the Prince Salm Dyck, and is hence not included in his magnificent work; it has never before been figured."—(*Ibid.*, t. 6077.)

**BAMBUSA STRIATA.** *Nat. ord.*, Graminacæ. *Linn.*, Hexandria Monogynia.—Native of China. The anthers are purple and showy. "The specimen at Kew, sent from the Calcutta Botanic Gardens, is about 6 feet high, but Lindley describes it as attaining 20 feet, which from its habit it may very well be supposed to do. It belongs to Munro's third section of the genus *Bambusa*, which has a long hairy style, and to which the *B. vulgaris* and two other species belong. This plant flowered in November last, with Mr. Bull, who kindly sent me the specimen figured; its anthers stain paper of a lilac colour; it has been called *B. Fortunei*, which I take to be a very different plant."—(*Ibid.*, t. 6079.)

**GOOSEBERRIES LORD DERBY AND VICTORY.**—"The Gooseberries of the Lancashire growers have long been famed for their great size, but an impression is abroad that they are inferior in quality as dessert fruit. This, however, is a false conclusion, so far as many of the varieties are concerned. We have selected, from a number of sorts obligingly forwarded to us last season by Mr. C. Leicester, of Compton Road, Macclesfield, two varieties, which were certainly quite up to the average as regards the important quality of flavour, while from their size and beauty they rank amongst the choicer sorts grown for exhibition. *Lord Derby* is a seedling of Mr. Leicester's, and is as yet new and little known. It is a fine showy fruit of the hairy-red class, bright and telling in colour, and brisk as well as rich in flavour; in every way a first-class fruit. *Victory* is less novel, but is a first-rate variety amongst the whites. The former has been grown as heavy as 22 dwts. 11 grs.; the latter has reached to 17 dwts. 10 grs."—(*Florist and Pomologist*, 3 s., vii., 1.)

THE ROYAL HORTICULTURAL SOCIETY AS IT IS AND AS IT MIGHT BE.—This is the title of a pamphlet by G. F. Wilson,

Esq., F.R.S., now published. We have seen this, and we have a circular also announcing the formation of a "Vote-by-proxy Association." At present we withhold all commentary.

### OLD FRIENDS WITH NEW NAMES.

THE *Irish Farmer's Gazette* is right about synonyms and pseudonyms, but is not right in saying that Rivers' Royal Ashleaf is the same as Myatt's Prolific. Lord Portman's gardener, Mr. Leach, told me that at Bryanston they preferred Myatt's Prolific to the Royal Ashleaf. The raiser of Mona's Pride sent it to me from the Isle of Man, and I say that it is not the same as the old Ashleaf. Mona's Pride is a much larger Potato and has much stronger haulm; it is a great cropper, and does not require such high cultivation as the old Ashleaf. It is inferior to it in flavour; moreover, its haulm and foliage are more frost-resisting. The Lapstone, Pebble White, and Yorkshires Hero, though much alike, are not the same. They are all three here. The last two are evidently derived from the Lapstone. Haigh's Seedling properly is the Copper-nosed Kidney, from which the Lapstone was derived. Both having been raised by Haigh, may therefore be called Haigh's Seedling. Major Haigh, who was an army boot and shoe contractor, died at Bardsley, near Leeds, about 1855 or 1856. I consider the old Ashleaf and the Lapstone for quality and flavour to be still the best two Potatoes. The old Ashleaf requires protection for its haulm and foliage in spring. I do not keep it now, but I used to grow it successfully by protecting the haulm with wooden troughs like the roof of a house, raising the ends on bricks as the plants grew. Keep the foliage dry, and Potato plants will bear many degrees of frost.—W. F. RADCLIFFE.

### RECENT GLEANINGS ABOUT INSECTS.

In reply to a correspondent, Mr. Newmau remarks, in the "Entomologist," that the common and annoying little moth *Hypomomeuta padella*, the larva-webs of which overspread Hawthorn hedges and fruit trees, has not yet had its history clearly made out. Haworth, who called it "Padi," described five varieties, while Stainton, our latest authority on the small Lepidoptera, sees no notable differences between those that feed on the Apple and the Hawthorn, and we do not know positively what is the continental type. Guenee has a "*Mali-nellus*," which Mr. Newman thinks may be our Apple-feeder.

One of the assistants of Messrs. Mander, of Wolverhampton, discovered in a nodule of Sierra Leone copal a living larva, seemingly of a beetle, the cavity being considerably larger than the body of the insect, yet hermetically sealed from the outward air. Two curious questions suggest themselves: "How did it get in?" and "How long had it lived in such a position?" The Rev. G. C. B. Madden records a singular change of instinct on the part of bees. In the district of San Francisco there were formerly no hive bees. Some swarms were introduced there, and in their customary manner they stored-up honey for the winter; winter, however, did not, as a matter of course, come as they anticipated, and it was found that thenceforth they ceased to lay-up stores, and only employed themselves in their usual labours for the continuance of the race, and obtained food as they required it.

Some further observations on the subject of controlling sex in butterflies have been published in the "*American Naturalist*," and Mr. Riley adduces evidences tending to upset Mrs. M. Treat's inferences based on her own experiments, though he compliments the lady entomologist on her diligence, and adds that "most naturalists will be proud that a lady has set the example of making such investigations." As to this conclusion we are not so certain. It does not appear that any facts noted by Mrs. Treat go to upset what is still regarded as a fundamental principle by anatomists and physiologists—viz., that the sex is determined at the moment of conception. In that case each egg of a butterfly or moth leaves the body of the parent insect with the germ within it of the future male or female, and in the overwhelming majority of insects these are in equal proportions throughout each brood, though it may happen that the progeny of a particular insect here and there may show an overwhelming preponderance of one sex over the other. From the experiments made by stinting larvæ in quantity of food resulting in the production of more males, Mr. Riley only concludes that the females being the larger mostly, and therefore needing more nourishment, are diminished necessarily by this treatment in larger proportion.

That distinguished entomologist Mr. H. Doubleday has lately expressed his opinion in severe terms, though not stronger than the occasion requires, on the mischievous and dishonourable practice of foisting foreign specimens into so-called collections of British insects, which is now rendering it almost impossible to verify the authenticity of most specimens of rare Lepidoptera.

Concerning aphid honey Mr. F. Walker writes in the "Entomologist":—"Bees find their honey comparatively prepared for them in flowers, but the honey by the medium of aphides has various beginnings. It is extracted from the crevices of old Oak trees, from the twigs of young Oak trees, from the roots of Grass, of Sow Thistles, and of Parsnips, from the Nettle and the Bramble, from the Ivy and the Honeysuckle, from the Willow and the Poplar, from the Bog Myrtle and the Sea Aster, and its sweetness has abundance of other sources." What a pity it is in these scarce times that we cannot utilise aphid honey as an article of food!

A specimen of the exceedingly rare Sphinx, known to collectors as the Orange-tailed Clearwing (*Sesia allantiformis*), has been taken by Mr. Bryant at Greenhiths, the locality where the first authentic British example was captured by the late Mr. Chant many years ago. As late as the 7th of October an individual of the Silver-striped Hawk-moth (*Charocampa Celerio*) was taken on the wing at Bolton.

### BELGIAN HORTICULTURE.—No. 6.

M. LOUIS VAN HOUTTE'S NURSERY.

AFTER giving a general idea of this establishment, it is possible to summon a few particulars that may be of interest. Not a few have seen this world-renowned place, but the majority of your readers have had to content themselves with the descriptions of others, necessarily vague and disjointed, for it is difficult to know where to start, and once started, even more so to know when to stop. However, by way of finding a starting point it may be said, as there is no attempt at outside show, there are no grand specimens artistically grouped to create a striking impression inside. The establishment lacks the towering Palms of Linden's and the noble tree Ferns of Verschaffelt's; not that there are not fine and valuable plants of these and other subjects new and rare, but they are scattered over a great extent of houses, as if the health and comfort of the particular plants were more thought of than mere effect. It is evidently not the forte of this nursery to "go in" for covering a large area with a limited number of sensational occupants, the object being rather to raise by hundreds of thousands everything in demand, and so as to be easy of transmission to nearly all parts of the world. It is pre-eminently a plant-manufactory—by no other expression can it be understood so well.

Here, for instance, are Camellias manufactured to a greater extent, perhaps, than in any other nursery on the earth's surface. These alone are a sight to see: On one side a batch of 150,000 cuttings, striking apparently with the greatest freedom and absence of loss; on the other, 100,000 recently "worked," all in glass cases or frames in a temperate structure. In sunken brick-pits are stocks potted-off and plunged, rooting through and over the sides of the pots to perfection. Again, there are thousands of plants shifted-out after grafting, and standing out of doors in shady places, but free from "drip." One batch of 80,000 in bud, for sending-off the same autumn, were remarkable for their promise and luxuriance. They were standing between tall upright Poplars, which had been planted in lines from east to west, and at distances so that the shadow of one row reached the base of the other—the very place for a Camellia forest. Most gardeners are aware of the free growth and exuberant aspect of Belgian Camellias, and are also aware of their frequent retrogression shortly after being subjected to the change the plants meet with in England. Their luxuriance is called plethora, induced, as is commonly supposed, by being planted out in the open ground, grown quickly, lifted, and potted. This is not so. I was told that I should see Camellias turned out in the open (prepared) ground and growing like Laurels. In this one nursery were, at the least, 500,000 Camellias in pots—plunged, it is true, many of them were, but yet each was potted; nor in any other place did I find any really planted out, save a hundred or two under glass in one nursery, and these were below par as to health. In saying this I do not assert that they are not plethoric as we understand the term, only that it is not induced by planting-out. It is but reasonable to suppose,

when a plant is forced into an extra luxuriant and abnormal growth in its early stages, that it is at the sacrifice of its permanent welfare. We prefer a more steady, sturdy growth at the beginning—a sound foundation, and in this I think we are wise; I have certainly seen finer, better, and more really sound and healthy large specimens of both Camellias and Azaleas in England than came under my notice “over the water.” Still, the young stuff of our continental neighbours grows with marvellous freedom, and their larger plants are wonderfully healthy, so that what we regard as plethora here is not so to the same extent there.

There is no doubt that the Belgians treat the Camellia generously. We may think they err on the side of liberal diet, but they think we err on the other side—starvation. Possibly the true line is the old one, a medium between the two extremes. There is very little doubt but that thousands of Camellias have been starved out of existence by being confined in a bare larder—a poverty-stricken soil—and having insufficient supplies of water. The Belgians water copiously, and occasionally (about once a week the grower told me), give weak cow-dung water, but their main dependance is on a full and free—almost lavish—supply of the pure element. With good drainage it is surprising the amount of water the Camellia will not only endure but delight in. The fleshy rootlets can brook no drought—not much more than can those of the Hyacinth; and if these rootlets are once permitted to shrivel, the emission of fresh ones is slow and stubborn work and, in the meantime, the plant loses health not easy to regain. Than a healthy Camellia nothing is much easier to keep healthy; than a sickly one few things are less easy to cure. But the Belgians have a leaf soil which we have not, or at any rate which is not common amongst us. In this the Camellia roots with extraordinary freedom, and it is thus endued, especially in its young state, with a remarkable hue of health. The leaf soil, it is evident, contains food in plenty, and easily digestible to the young plant; its lasting nutrition is another matter, and the point is open to conjecture. The plants, however, are mostly young when distributed, and the amateur purchaser is too often mortified to watch them change from ivy green to the unwelcome tint of waning health. Plants such as those referred to are coming over to England in large numbers, and will be killed by hundreds, but their owners part with them hardly.

I have letters on this point pressing for information. This must be my reply to them: These foreign Camellias will not stand a dry greenhouse shelf at once, and the soil not watered until the pot rings to the knuckles. Stand them on the floor for a time, and keep it moist. Water freely and syringe frequently for a week or two, adapting them to their changed circumstances by easy gradations. Let them remain in the same soil until they have made their fresh growth. There would seem to be, in the minds of many, an irresistible propensity to pick away the soil from a plant the moment it comes from any nursery. There is a vague notion that it is not right and they must “give it fresh.” This, in nine cases out of ten, is a mistake. One check at a time is enough. Do not, therefore, be in haste to add to a change of temperature and atmosphere a change of soil, and run the risk of giving worse than you take away into the bargain. The older a man grows, and the more experience he has, the more will he be disposed to repose confidence in a trusty man, and such are all our nurserymen of reputation. Trust their soil, then, and give it at least a few weeks' grace, and it will be better for seller's fame, buyer's temper, and the plant's health. I must, however, defer a notice of fifty thousand Gloxinias in bloom and an acre of Azaleas for another paper.—J. WRIGHT.

### KEEPING FRUITS.

To grow good fruit requires a thorough knowledge of the subject, both as regards the pruning, pinching, and training of the branches, and the management of the roots. If the latter are in unsuitable soil, or that which has not been properly cultivated, or if the soil has been overdone with rich manures, success is very uncertain. But the subject of this paper is not to show how to grow good fruit, but to give a few hints to amateurs and others as to the best way to preserve it in good condition.

It ought to be the aim of all cultivators of fruit to continue the supply of it for as long a period as possible. Gooseberries, Strawberries, Cherries, Raspberries, and all similar small fruits can have their season prolonged by planting in different situations; or if this is not possible, a selection should be made of

sorts that ripen at different periods. For instance: If early, midseason, and late Gooseberries are planted in a position fully exposed to the sun there will be a succession of fruit; the early varieties will be gathered before the late sorts come in; but if in addition to this a few bushes of some late variety that hangs well, such as the Warrington, can be planted under a north wall, a further advantage will be gained. Red and White Currants may be grown as bushes in the kitchen garden, and Morello Cherries as pyramids; but the same fruits do remarkably well, and the fruit hangs much longer on the trees, if they are planted against a wall facing the north. In warm seasons some of the choicer fruits will ripen well on a north wall, in some instances exceedingly fine Apricots have been gathered from such a position. Of course it would not do to plant there for a certain crop of this fruit.

Besides planting in early and late positions, it is often necessary to have recourse to nets to protect the fruit from the depredations of birds and wasps. Haythorn's hexagon nets are the best I am acquainted with for protecting fruit from wasps; but nets with close meshes are a necessary evil, and should not be kept on the trees longer than they are required to protect the fruit, as they prevent sun and air from gaining access to the trees at a time when these agents are most required to ripen the wood and the fruit buds for next season. If there is no danger of wasps attacking the fruit, old herring nets are the cheapest and best protection from birds. The nets should be raised above the bushes or trees by means of sticks with a fork at one end, and made secure at the surface of the ground by means of pegs. Even with all these precautions blackbirds and thrushes, allured by the tempting dainties, will make desperate efforts to get inside; they will run and fly all round the nets, looking for an aperture large enough to admit them. If any of the old nets which have been in use require mending it ought to be seen to now, and if new ones are required they should be ordered. All such repairs are best done at a time when work is slack.

*Keeping Apples and Pears in the Fruit-room.*—These fruits cannot be kept in good condition for a lengthened period if

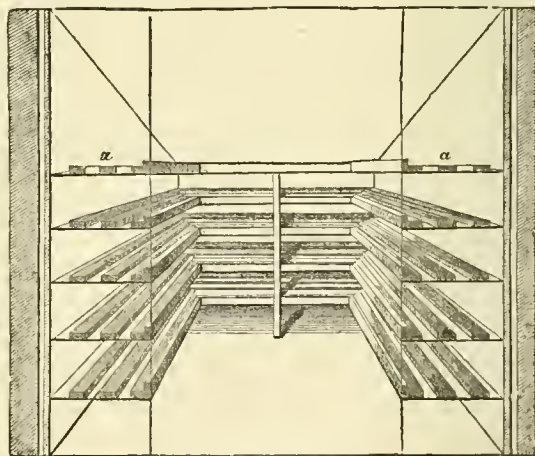


Fig. 1.—Interior View.

there is no rightly-constructed room in which to store them; but besides this, the manner and time of picking the fruit are of primary importance. Apples should not be gathered before they are ripe, which can be ascertained by cutting one of the fruits, and if the seeds are of a light-brown colour the fruit may be gathered; if at the same time it does not part readily from the tree only a portion should be gathered, the remaining portion being left a week or ten days longer. Pears require much more judgment as to the best time to gather them. They should be taken at different degrees of ripeness; three gatherings may be made from one tree at intervals of a week or more, as the case may be, and there are some varieties which if allowed to remain on the trees until nearly ripe are worthless, such as Williams's Bon Chrétien, Beurré d'Amanlis, and Fondante d'Automne. Even Pears that ripen in midwinter are best gathered successively. Then all fruits intended to keep must be gathered carefully. A basket should be used the handle of which a hook is attached to hang it on the tree, so that the person gathering the fruit may use both hands,

depositing it carefully in the basket. The fruit should not be removed from this until it is taken to the fruit-room and deposited on the shelves by hand. All fruit in any way damaged

should be separated from the sound specimens, this to be kept by itself and used first.

But for the fruit to keep well after it is gathered there

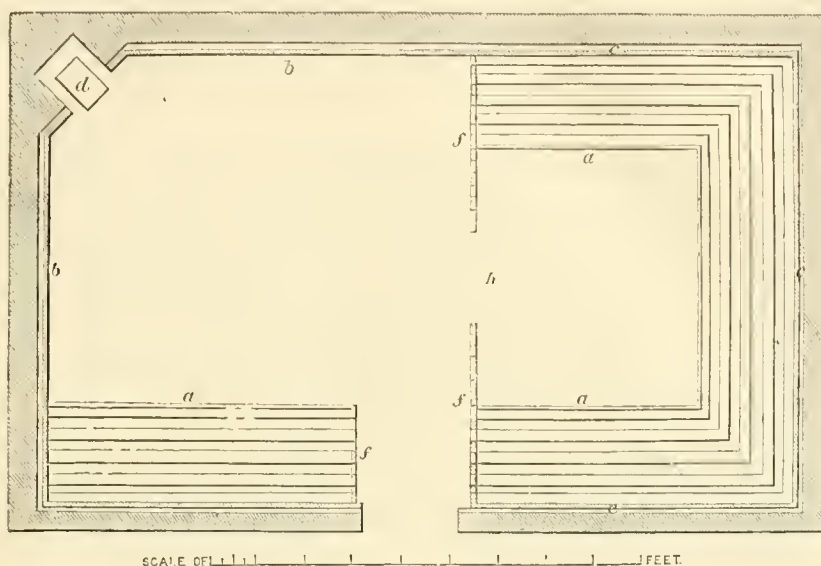


Fig. 2.—Ground Plan.

should be a good fruit-room. If possible a room should be built specially for fruit. An upper room is too dry, and a cellar is generally too damp. The floor of the room should be elevated a foot or more above the surrounding surface to insure a dry bottom, and the best form is a lean-to, with the highest wall on the south side, so that the sun would not act upon it,

as fruit requires an equable temperature. The walls should be thick, and if they are made hollow so much the better. Many fruit-room walls are of 9-inch brickwork, but 14-inch work is better; the thicker the walls are the more equable will be the temperature of the interior.

The internal arrangement should consist of a series of shelves

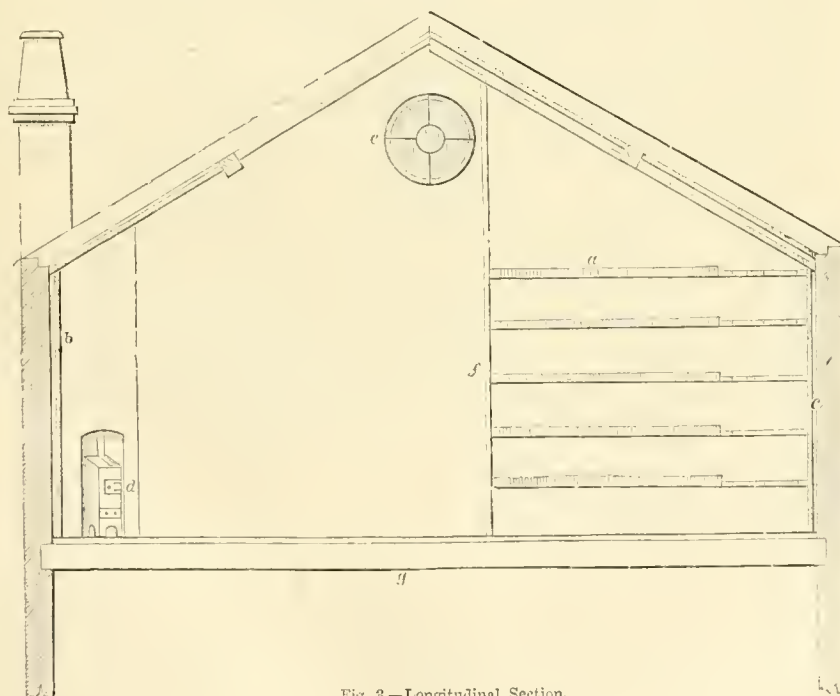


Fig. 3.—Longitudinal Section.

#### REFERENCES TO ENGRAVINGS.

a, Shelves made with battens,  $1\frac{1}{2}$  inch wide, and  $1\frac{1}{4}$  inch apart.

b, Close boarding around the sides of the room.

c, Air space between the boards and the wall. The roof also has an air space on the north side between the two plaster ceilings, as shown on the section.

d, Stove.

e, Circular window hung on pivots, and fitted with a roller-blind.

f, Partition (the shelves).

g, Each board.

h, Work similar to other fruit-room.

or stages one above another, with an outer edging to each to prevent the fruit from falling-off. The staging in the fruit-room at Loxford Hall is 3 feet wide, one stage being placed above another; the distance between is 1 foot 9 inches. The staging is of white pine, and is formed of laths made of inch deals; the laths are 1½-inch wide, a space of 1 inch being allowed between each. The stages are easily fixed. Upright posts of deal, 2½ inches square, reaching from floor to ceiling, are ranged in line; 3 feet from the wall cross-bearers, 1½ inch square, with one end in the wall and the other fixed to the upright posts, are placed at the proper distances, the laths being nailed to these cross-bearers. If the house is wide enough a table may be fixed in the centre, on the same principle as the side stages. The fruit keeps best if laid-out on these stages not more than two deep, all the better if only one deep.

Fruit intended to be kept in good condition after February should be packed in barrels or boxes amongst dry sand, each specimen being wrapped-up separately in soft paper. I have also kept fruit with straw laid under and over it, also laid out on cloths, but the above is what I consider the best. Of course, although it is recommended to build the fruit-room on the shady side of the wall, it does not follow that no other position will answer; facing east would be next best, then west, and south worst of all. A fireplace should be built in the room, though it will not be necessary to use it often. It will require to be lighted should very severe frost set in, as should the fruit become frozen it will soon decay.

Where the garden is but small, and only a small quantity of fruit to be kept, it may be stored in the dwelling-house in any convenient and suitable place, the main essential being that all fruit should be laid in an airy place for two or three weeks after it is gathered, all decaying fruit being removed as soon as it is perceived. Amateurs and others who have been successful in keeping fruit well under adverse circumstances would confer a great favour on many readers if they would publish through the columns of this Journal the means used.—J. DOUGLAS.

[The accompanying are drawings of a fruit-room, in which the later varieties of Pears in particular were kept in extraordinary condition till an advanced period of the season. Fig. 1 is a view of the interior, fig. 2 the ground plan, fig. 3 the longitudinal section. The reference letters are in all cases the same.]

## NOTES ON VILLA AND SUBURBAN GARDENING.

**INSECTS AND DISEASES OF PLANTS.**—Plants in rooms, especially Geraniums and Roses, are very liable to be attacked by aphides. These may be removed by tobacco smoke or tobacco water, and, where the smell is not offensive, smoke blown from a common tobacco-pipe is as effectual as any other method. Camphorated water may be used by those who dislike the smell of tobacco. Mildew occasionally, though rarely, attacks house plants, and its appearance shows that the plant has been in impure air, or otherwise improperly treated. Sulphur or camphor will effectually remove the mildew; and a scaly insect of the coccus tribe, which appears occasionally on Oranges, Camellias, and similar plants, may be removed by a sponge and water.

**PLANTS AND FLOWERS IN ROOMS.**—Many persons have a dislike to plants in houses as being unhealthy, and as their dislike is in a great measure groundless, I may notice it. Dr. Priestley was the first to show that the leaves of plants absorb carbonic acid gas by their upper surfaces, and give out oxygen by their under ones, thereby tending to purify the air in as far as animal life is concerned, because carbonic acid gas is pernicious to animals, and oxygen is what that life requires. It is in the light, however, that these operations are carried on, for in the dark plants give out carbonic acid, and this may be one reason why plants grown in the dark have little or no charcoal in their substance. It does not appear, however, that any of the scentless products given out by plants are injurious to human beings, because those who live among accumulated plants are not less healthy than others, though many persons feel dislike, and even pain, from the odours of particular plants in a way not very easily accounted for.

On the Continent in general, and in France and Germany in particular, flowers of all sorts, but particularly the most fragrant, are admitted into the saloons, chambers, and even bedrooms of people of all classes, and they, rather than complain of any ill effects arising from their presence, complain more of the difficulty of procuring them in sufficient abundance. The flowers most in demand for the chambers of the French and Germans are Oranges, Jasmine, Carnations, Honeysuckle, Mignonette, Olive, Rocket, Rose, Violet, Wallflower, Rosemary, Stock, Lavender, Savory, Oleander, Hyacinth, Lilac, Syringa, Heliotrope, Narcissus, &c.—all sweet-smelling flowers, and these

they indulge in to a very considerable extent. We may safely conclude, then, that plants admitted into rooms to the extent they are in general can produce no effect injurious to the health of the majority of people, but, on the contrary, will afford amusement to the mind and exercise to the body. The mind will be agreeably exercised in contemplating the beauty of the flowers, but much more so still if the study of their respective parts, nature, and structure, in a botanical and physiological point of view, be at the same time attended to. An agreeable and rational exercise will be provided for the body if the proprietor, particularly if of the softer sex, take the entire management of the little window garden.

Plants in rooms turn not only their leaves but their branches to the window by which the light entered, and a plant may, by turning it at intervals, be made to bend successively to all sides; but such bendings weaken the plant, and thus it is an excessive or unnatural action. This turning of the plant to the light is always, of course, in proportion to the brightness of that light as compared with the other sides of the plant. Flowers, too, open their petals to the light and close them in the dark, or in some cases, as in that of the Crocus, when a cloud passes over the sun. The same flower, and also some others, will open their petals to the light of a lamp or candle, and close them again when that is withdrawn.

It follows, as a necessary consequence, that in rooms plants should be placed as near the window as possible, that the window should have a south aspect, and that they should be as seldom as possible shaded with blinds or otherwise. If placed at a distance from the windows, plants should be frequently changed, and to place them on tables or mantel-shelves is bad management. As the weather has been very changeable lately, particular attention is required for protecting everything that is likely to be injured by frost. When the nights are sharp and cold all the plants should be drawn back from the window, or set down on the floor of the room. Pelargoniums, owing to the late mild weather, will now be nice plants if they have been well treated, and must be carefully watered. If they incline to grow-up weak and spindly the points of the shoots may be nipped-off; they should be watered sparingly, and allowed to have plenty of air every fine day.

**VEGETABLES.**—If not done last week, a sowing of Radishes may be made on a warm border if the weather is favourable, but the beds must be carefully covered in severe weather, as directed last week. Vacant ground, if any, may be dug, and everything that will forward the spring work should now be done before that busy time arrives.

**FRUIT.**—If any fruit trees remain not pruned it is not yet too late to perform that operation. Gooseberry and Currant-pruning must be completed as soon as possible. After pruning it is well to top-dress the bushes a little. To accomplish this, draw a little of the surface soil away with a hoe, then apply the manure, and finally soil the whole over about 2 inches deep.

**FLOWERS.**—This changeable weather is very unfavourable to flowers, and they will require much attention. If severe frosts set in, China Roses, &c., trained on the cottage trellis should have some protection, for, being in a forward state, they will be injured. Spring flowers, as Anemones, Tulips, Crocuses, &c., if any, must also be looked after and protected with fern or straw.

**PLANTS PROPER FOR WINDOW CULTURE.**—As the situation of these plants is different from what they occupy in their natural state, it becomes necessary to select such as are capable of accommodating themselves to circumstances; and as the unfavourable circumstances of house plants are chiefly want of free and pure air and of light, and in those species which are accustomed to long seasons of repose in the winter, the want of a uniform temperature, these circumstances must be kept in mind in the selection. Rooms, especially in crowded cities, are the most unnatural, and on that account the worst situations in which plants can be placed, and therefore, if healthy plants, and an abundance of bloom are sought, variety must be sacrificed. Plants which will continue healthy for a long time in the confined air of rooms are generally those which have a peculiar surface or texture in the foliage, such as many of the Aloes, Cactuses, and Mesembryanthemums, among what are called succulent plants.—W. KEANE.

## LOCAL PLANTS.

MANY years have passed since in a far distant land the writer of this delivered, among other botanical lectures, one on "Local Plants." He referred to *Primula imperialis*, only found on Pangerango Mountain in Java, in the damp shade of thickets at an elevation of 9000 feet. He referred to the Kerguelan Cabbage, which a naval friend said was found nowhere except on that island.

The Sea Pink and Scurvy Grass are found only on the seashore and summits of our Highland mountains—evidence that these were once islands enclosed by the sea.

*Saxifraga cernua* is found nowhere in Britain except on the

summit of Ben Lawers; there also occurs, and nowhere else in the world, the Lichen *Verrucaria Hookeri*; there also, and nowhere else, occur the Moss *Gymnostomum caespitosum*. *Draba rupestris* and *Alsine rubella* occur nowhere in Britain except here and in a place of Sutherlandshire. *Oxytropis campestris* is found in Britain only on one cliff, of Cleve, in the Braemar Mountains; *Trifolium Boceoni* only on the Lizard in Cornwall. So in other lands there are hermits of the vegetable world, which prefer being separated from all their relatives. Examples of these are the Sicilian Horehound (*Marrubium peregrinum*); the Blue-bottle Thistle (*Carduus*

*cyanoides*); the Crimson Grass Vetch (*Lathyrus Nissolia*); the Elegant St. John's-wort (*Hypericum elegans*); and the Heath-leaved Sun Rose (*Helianthemum Fumana*). These and some others, it has been well observed, "stand quite insulated, and seem as if they would disappear, did not Nature, in a manner often inexplicable, provide for their continuance." But the most remarkable we have not yet mentioned—namely, *Forstera sedifolia*, on the summits of the loftiest mountains of New Zealand; *Melastoma tidorensis*, on the crest of Mount Tidor, in the Molucca Islands; and *Disa cornuta*, on a few spots near the summit of Table Mountain. Whole natural orders are



Aloe.

Mescal Cactus.

Melocactus.

Cactus, or Gaucos.

## MEXICAN CACTI.

similarly limited in their places of growth. Meyen observes that the singular group of the Cactaceæ is properly peculiar to the torrid and subtropical zones of the New World; two species only have yet been found in East India and China, and there in the interior of the country, at considerable altitudes. However, the form of the Cactus has its representative in the Old World; for on its eastern, as well as its western side, we have *Euphorbia*, which we should certainly consider Cacti were we without the knowledge of their organs of fructification; as *Euphorbia nerifolia* in Southern China, which the *Ipomœa Quamoclit* twines round and decorates with its scarlet flowers, just as *Loranthus aphyllus* does the *Cerei* of Chili. *Euphorbia canariensis* and *Euphorbia balsamifera* represent the Cactaceæ in the western part of the Old World. It is equally inexplicable why the Old World only should pos-

sess the true *Ericæ*, while the *Erica cœrulea*, not a true *Erica*, comes in their place in the New World.

The mention of the Cactaceæ reminds us of another of their peculiarities. No artificial treatment, no other quarter of the globe, can produce them of the same gigantic growth as in the places of their nativity. We see them in their pigmy forms in the Royal Horticultural Society's conservatory, and we have seen them larger in the stoves of England and in the Calcutta Botanic Garden, yet there they are all dwarfs compared with those seen in their Mexican places of birth. "It is to the genus *Cereus*," says Figuiér, "that the gigantic species indigenous to Mexico and California belong. The stem of this vegetable wonder, flanked by its branches, resembles an immense candelabrum, 15 yards high. In the engraving\* we give

\* Figuiér's "Vegetable World," Cassell's edition.

a representation of the gigantic *Cereus* of Mexico. The *Echinocactus*, originally from America, is frequently cultivated in this country. Its stems, clustered together in the shape of an egg or sphere, present longitudinal sides separated by straight furrows. These sides are furnished on their whole length with white cottonous excrescences, provided with short and spreading spines. It is from the centre of these thorny tubercles that the flowers spring. They are always large and beautiful, and last for many days. The *Echinocactus* of Otto, which is frequently cultivated, is indigenous to Mexico. The *Meiocactus* has a globular, ovoid, or pyramidal stem, with the sides separated by straight furrows. This stem is surmounted by a kind of woolly, or rather hairy tuft, formed of very compact spines, from the axilla of which the leaves spring; they are very small, and ephemeral in their duration. The *Meiocactus vulgaris*, cultivated in gardens as an ornamental plant, was originally from the Antilles.

"Lastly, we must mention the *Mammillaria*. The thorny tubercles of this *Cactus* are spirally disposed round the stem. The flowers, which last a long time, often surmount the trunk, forming a kind of crown to its branches."

## DOINGS OF THE LAST AND PRESENT WEEKS.

### HARDY FRUIT AND KITCHEN GARDEN.

DURING the present mild weather an opportunity will be afforded to push forward the nailing. In most places the old system of training trees with nails and shreds is still followed, although in many new gardens the walls have been wired, the aid of nails being dispensed with. In the matter of nailing and tying trees out of doors the state of the weather must be studied. Where there is much wall space, some of the work may have to be done in unsuitable weather, but men cannot do such work in a frosty wind with satisfaction to themselves or their employers. Where walls for the finer sorts of fruit, especially *Peaches* and *Nectarines*, can be covered with glass a great advantage is gained, as not only can the work be done under shelter, but even if there is no heating apparatus there is the greater certainty of a crop, which will be very far superior as regards quality to that ripened out of doors. In many places, and especially where the soil is light with a gravel subsoil, *Peaches* and *Nectarines* out of doors are a very precarious crop. The best fruit we have seen from open walls has been in gardens where the soil has been of a good depth and a clay subsoil.

Many gardeners do not nail their *Peach* trees until March, they wait to see where the flower buds will be most abundant; but a little experience will soon teach the cultivator which class of wood to remove at the time of pruning. The wood ought not to be too thickly placed, all gross shoots should be cut out at the base, and only the medium shoots cut back—that is, those which are furnished with triple buds, in which case the triple bud will usually be a wood bud, and it can readily be distinguished by its form, which is elongated and pointed. In pruning always cut back to such a bud. The smaller shoots are seldom furnished with wood buds except one at the point of the shoot, so that if these shoots are cut back there will be no growth beyond any fruit that may set upon them, and the fruit would not come to perfection. *Peach* trees ought to be removed entirely from the walls and be nailed afresh, and if it is necessary to use any of the old shreds they should be dipped in boiling water first. Begin by nailing in the main branches, filling in the intervening spaces with bearing wood, and training some young growth to cover the naked stems of the old wood.

Our own work has been finishing pruning the fruit-tree borders and digging the ground. We had a reserve of some rich loam that had grown *Melons*, a dressing of this was placed over the surface of the ground first. If digging and trenching are behindhand, all such work ought to be rapidly pushed forward, and any alterations or planting to be done must be seen to forthwith.

### FRUIT AND FORCING HOUSES.

Early *vineries* now require attention. In our own houses the most forward growths have been trained and stopped; this work should be done in time and with care. The best way is to fasten one end of a strand of matting to the spur, and attach the other tightly to a wire in the direction the shoot has to be trained. The growing shoot can then be tied to this with a strip of matting, bringing it down to its place gradually; if the growths are tied down too closely at first many of them will snap off. By the time they are long enough to tie down, the temperature may be much increased. If it is desirable to get the *Grapes* ripe as early as possible, the minimum temperature may be 65°, rising in dull cloudy weather to 70° by day, and with sun heat to 75°. When the growths have pushed about 5 or 6 inches will be a suitable time to give the border a second good watering, and before doing so (if it was not done after the first watering), spread some rotted manure over the surface of the border, so that the water may wash nutriment down to the

roots. Syringe the walls and damp the paths twice daily, as well as allow water to evaporate from troughs over the pipes. Do not syringe the *Vines* after they start into growth.

Cut all the fruit from the *Vines* in late houses. The method pursued is this: Three or four bits of charcoal are placed in clear and clean bottles, which are then filled to within an inch of the top with clear rain water; a string is attached to the neck of each bottle, so that it may be fastened to a rail fixed a little above the shelves of the fruit-room. The bottle is allowed to hang in a slanting position to allow the bunch of *Grapes* to be clear of the shelves. All the bottles are first placed in position; and as the *Grapes* are cut with the branch attached, the bunches are conveyed to the fruit-room, and the end of the branch inserted in the water at once. Lady Downe's, Gros Guillaume, and Muscat of Alexandria are the sorts which have been bottled this year. Lady Downe's seems as if it would keep well; very few decayed berries have been removed. The other two sorts will not keep so long, as the footstalks begin to wither. As soon as the bunches were cut the *Vines* were pruned, all loose bark removed, and they were then dressed with the usual composition.

*Mushroom House*.—Beds in bearing must not be allowed to become dry. If the bed is dry, as probably it will be, water with rain water some degrees warmer than the temperature of the house. It is not desirable to give the beds a soaking, merely a moderate watering. Mushrooms are sometimes tough at this time of the year, when much artificial heat is required. This is invariably owing to two causes—viz., the beds not having enough water, or overdryness in the atmosphere of the house. Water or syringe the paths, walls, &c., as often as they become dry, which sometimes will be once a day, at other times once a week. The *Mushroom* house is generally on the north side of a garden wall, so that it is not usually a dry place. A thermometer to test the bottom heat should be placed in all beds where the spawn has commenced to run, and should the temperature of the bed fall below 65°, a covering of dry oat straw may be placed over the bed, which will be the means of keeping up the temperature. It should always be borne in mind that there is much more danger of the spawn being destroyed by too much than there is by too little heat, and the beds had better be too dry than too wet. Those who possess a good *Mushroom* house need not fail to have a bountiful supply of *Rhubarb* and *Sea-kale*, which may be introduced to this structure as has been previously directed. *Chicory* and *Dandelion* roots may also be potted and placed here to blanch; they are at least wholesome additions to the salad.

See that there is a continuous supply of *Mint* and *Tarragon* from the early *vinery* or other forcing house. Cook will be sure to ask for it if there is none. *Mustard* and *Cress* sown once a week in boxes will maintain a continuous supply from the same source.

### PLANT STOVE AND GREENHOUSE.

The smaller plants in the stove will require repotting, especially those that are intended to form specimens. Nothing injures a plant so much as allowing it to become pot-bound. It is early yet, and only those plants that really do require a shift should have it now, and the potting must also be done with care. Many of the hardwood stove plants succeed best in a compost of turfy loam and turfy peat, one part of the former to four of the latter; leaf mould and rotted manure are best omitted. The pots, as well as the crocks, should be quite clean; the latter should be laid in carefully at the bottom of the pots, the larger potsherds being placed under, and finishing off evenly with smaller pieces. Some fibrous peat quite free from loose mould should be placed over the drainage; indeed, too much care cannot be taken in potting all classes of valuable plants to see that the drainage is perfect, and this must be looked after at the time of potting, as it is almost impossible to remedy any defect afterwards. The potting material for all stove plants should be porous; silver sand added to the soil will effect this.

It is desirable in all houses to have an edging of small plants to the stages. These are best grown in 5-inch pots, but the plants must not remain too long in the same pots, otherwise they assume a sickly appearance. The best plants for this purpose are some of the *Selaginellas*, such as *apoda* and *denticulata*. Some of the *Adiantums* are equally well adapted, especially *A. cuneatum*. Small plants of *Gymnostachyum Verachaffeltii* and *Sonerila margaritacea* intermixed, make a charming line; they must all be kept in healthy growth by frequent potting in suitable soil. We have been re-arranging the plants in the greenhouse, and now that forced flowers are coming in there will be no lack of bloom. *Cinerarias*, where the seeds were sown early and the plants have been well cared for, will now make a good show with their brilliant colours; the flowers will be all the brighter and open better if assisted with a little manure water when the pots are full of roots. The water must not be strong, otherwise it will injure the plants by causing the branches to die-off. The tree *Carnations* have not failed to give us blooms all the winter. Most of the leading flowers have a

tendency to burst; this is prevented by tying with a strip of matting, or using small indiarubber rings. The above and Cyclamens ought to be grown by all who have a greenhouse without the advantage of forcing houses to bring plants into early flower.

#### FLOWER GARDEN.

The grass has been growing freely on the lawn, and has an untidy appearance; on the first favourable opportunity we shall run the lawn-mower over it. Potting Zonal Pelargoniums from the boxes in which the cuttings were struck into 60 sized pots. It is now time to see that Verbenas, Lobelias, Alyssum, Ageratum, &c., are propagated if there is not sufficient; and even if there is stock, such subjects as Verbenas succeed best from spring-struck cuttings. Coleus, Iresine Lindeni, and the Alternantheras, especially *A. amena*—this last the prettiest, but the most difficult to grow—should be in a house where the night temperature is about 55°.—J. DOUGLAS.

### TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

**DODDER-FLOWERING STOCKS (B. W.).**—Any of the florists who advertise in our columns could supply the young plants. Write to them.

**CEDRUS ATLANTICA (D. M.).**—Mr. Gordon, in his "Pinetum," says it is "a noble tree, like the Cedar of Lebanon, growing from 80 to 100 feet high, with horizontal branches, and a tabular-shaped head, but rather open in appearance. It is found on the highest mountains in Barbary, particularly on the famous Atlas range in Northern Africa, at an elevation of from 7000 to 9000 feet, in great abundance, and is quite hardy, and more rapid in growth than the common Cedar." It was introduced in 1843.

**PINUS MAGNIFICA (Idem).**—This was discovered by M. Roez in 1856. Gordon adds:—"This magnificent tree grows from 110 to 130 feet high, with a most regular appearance, and merits its name on account of its grand foliage, forming great plumes at the ends of the shoots. It is found on the mountains of Morbia, in Mexico," and is the same as *Pinus Devoniana*.

**BREMEN INTERNATIONAL EXHIBITION (H. Outgies).**—You had better have it advertised.

**WORKMAN'S FLOWER SHOW (G. E. C.).**—In No. 558 of this Journal we published rules for village horticultural societies. You can have a copy if you enclose four postage stamps with your address.

**ROSE PIERRE DE ST. CYR—PEARS (C. R.).**—Pierre de St. Cyr is a hardy and late-blooming Rose, but there are so many kinds of finer quality it is hardly worth a place among better Roses. Four Pears for south wall in the north—Jargonelle, Marie Louise, Gansel's Bergamot, Haco's Incomparable. Four for dwarf standards—Louise Bonne of Jersey, Seckle, Comte de Lamy, Williams's Bon Chretien.

**WARLENBERGIA GRANDIFLORA (M. A. W.).**—It has been known here for nearly a century. It is portrayed in the fourth volume of the "Botanical Magazine," where it is fully described as a hardy perennial, a native of Siberia and Tartary, introduced by Mr. John Bell in 1782. It was then called a Campanula, and now some botanists consider it a Platycodon.

**GARDENIAS IN WINTER (Julia).**—They should now be kept rather dry, giving no more water than sufficient to keep the leaves fresh. In February you may place them in your small forcing house, giving them if possible a mild bottom heat; and if kept moist, gently sprinkling overhead twice daily, they will swell their flower buds kindly; and when the flowers show colour discontinue the sprinkling overhead. If the plants are not straggling do not cut them down, as it will destroy this year's crop of flowers. A few plants started at intervals of a month or so up to April will afford you a good succession of bloom. Keep moist after flowering and until the growth is made; then keep drier, or remove to a cooler and drier house.

**TOMATOES IN PITS (A Very Old Subscriber).**—As the bedding plants are out of the pits by the end of May, you may, by planting out strong plants of Tomatoes, then, have in your unheated pits a fine crop of fruit late in summer and in autumn. The seed should be sown in March in a hotbed, and the seedlings, when showing their second leaves, ought to be potted off singly in small pots, and returned to the hotbed, shading from bright sun for a few days. Keep them near the glass and only moderately supplied with water, and when the pots are full of roots shift into 6-inch pots, and place near the glass in a house with a gentle heat, or in a hotbed; when about 9 inches high remove to a house or frame safe from frost, and gradually harden-off. Plant-out in the pits as soon as you can, and do not stop the plants, as it only retards their growth, but train the shoots to the lower part of the wall right and left, and this will give you shoots for covering the upper part of the wall; when this is nearly completed keep the plants dry, and they will soon begin to flower. They must then be watered abundantly, stopping the shoots one joint beyond the fruit. The lights ought to be kept on throughout the summer, admitting air as required at 75°, and to keep the temperature from exceeding 90°, shutting-up at 75°. You may have a row of plants at 3 feet apart along the centre of the pit, and the shoots may be allowed to run on the ground or be supported with stakes. Orangefield Dwarf we should have for the centre of the bed, and Hathaway's Excelsior for the back wall. We cannot say whether Tomatoes or Ridge Cucumbers would pay the better. Consult a greengrocer, who will tell you what likelihood there is for a demand for Tomatoes. In large towns they usually sell well.

**POULTRY DUNG (W. S.).**—On no account heat it as you propose, for it would drive off much of the ammonia. It is good for all crops, and may be spread very thinly (4 ozs. to the square yard) over the surfaces previously to digging, or it may be dissolved in water, 2 ozs. to the gallon, and used as liquid manure.

**BRIAR STOCKS PLANTING (J. R.).**—The stocks may be planted in rows 2 feet 6 inches to 3 feet apart, and the stocks 9 inches to a foot apart in the rows. The soil is the worst possible for the Briar, which requires stiff land, but it may be improved by manuring. The situation, if not much shaded, will answer. You may have a row of early Potatoes between each row of Briars. The stocks will be fit to bud in July, at least the majority of them. Bianetti stocks may be planted in rows 2 feet apart, and the stocks 8 or 9 inches apart in the rows.

**EVERGREEN TREES VERY EXPOSED (H. W.).**—Silver Firs require shelter. The Corsican Pine (*Pinus Laricio*) will suit you. It grows rapidly after it becomes established, often a very trifle less than a yard in a season. The Austrian Pine (*Pinus austriaca*) is of denser habit, but not of such rapid growth as the Corsican Pine. If you could have two rows we would have Corsican Pine at the back and the Austrian Pine in front planted quincunx fashion. This would give you a much better shelter than one row only.

**TREES FOR CONCEALING BUILDINGS (Sevenoaks).**—You do not say whether you wish for evergreen or deciduous trees. We would not have any of the latter, but should plant two rows of Corsican Pine at the back and two lines of the Austrian Pine in front, and face them with evergreen shrubs, as Hollies, Yews, Portugal and common Laurel. This would give you a much better screen than deciduous trees, which would probably grow quicker; kinds of these that would suit are Sycamore, Lime, and Elm. Poplars are of quicker growth but not nearly so twiggy as the others, which is of consequence in winter. You could plant the Sycamore, Lime, and Elm at 8 feet apart, and have every alternate plant and row evergreen shrubs, as Hollies, Yews, Portugal and common Laurel, with a line or two in front, so as to give a cheerful appearance to the screen in winter.

**FRUIT TREES ON A SOUTH WOODEN FENCE (Idem).**—Being close-boarded and smooth it will answer for Plums, also for Cherries and Pears. Plums suitable are Belgian Purple, Coe's Golden Drop, Early Favourite, and Jefferson, to which you may add Green Gage, Golden Gage, and Transparent Gage, which are excellent for dessert; for culinary purposes Mitchelson's, Pond's Seedling, Prince Englebert, Victoria, and Yellow Magnum Bonum. The Plums ought to be 20 feet apart. Cherries we should have on the Mahaleb stock and plant 12 feet apart, or on the common stock and plant 20 feet apart. Kinds suitable are Empress Eugénie, May Duke, Archduke, Bigarreau Napoléon, Elton. Pears on the Quince stock, which you may for horizontal training have at 12 feet apart, or upright-trained 6 feet apart—Citron des Carmes, Beurré d'Assomption, Beurré d'Amanlis, Madame Treve, Colmar d'Été, Beurré Superfin, Gratioli, Conseiller de la Cour, Van Moas Léon le Clerc, General Todleben, Glou Morceau, Beurré Diel, Beurré Bachelier, Josephine de Malines, Marie Louise, Ne plus Meuris, Beurré de Rance, Bergamotte Espéren, Passe Crassane, and Madame Millet.

**RENEWING HEAT OF CUCUMBER BED (C. S.).**—Your pit has solid brick walls, and to place linings of hot dung against those would be practically useless for increasing the temperature of the bed, as the heat of the dung will not pass through the brick walls. The case would be different if the walls of the pit, back and front, were pigeon-holed from the ground to within 18 inches at the back, and 15 inches at the front of the wall plates; or if your pit be a lean-to from the stove, the front wall ought to be pigeon-holed, and there should be a supporting wall in front, the lining pit being 2 feet 3 inches clear of the brickwork. This, kept full of hot dung, would give you the heat needed, the heat passing through the pigeon holes to the bed.

**STRIKING CUTTINGS OF GERANIUMS (Idem).**—It is not too early to strike cuttings of bedding Geraniums; they may be put in from the present time up to the middle of March. A cucumber house is too hot for autumn-struck Geraniums, but would answer well for striking the cuttings.

**TREES FOR HEATH INFESTED BY RABBITS (M. A. H.).**—Where rabbits abound, the only tree we find suitable for a high and exposed position is the Corsican Pine. It is of quick growth, and rabbits do not interfere with it. Scotch Fir succeeds well in such a position, also the Austrian Pine, but rabbits bark them repeatedly. Plants a foot to 15 inches high are better for an exposed situation than larger ones, and for that size holes should be made about 15 inches square. In planting, care should be taken to place some fine soil under and over the roots, planting firmly, and only as deeply as they previously were.

**BUTCHER'S BROOM PROPAGATION (An Old Subscriber).**—If the berries have sound seeds these will germinate if sown in light sandy soil in a sheltered place out of doors, covering them about three-quarters of an inch deep with fine soil. The plants may in part appear above ground the first season, but usually not until the second year. We do not know that the plant is propagated by cuttings, but the most common mode of increase is by suckers and division, securing to each division one or more growing points or buds, which you will find at the base of the present growths. From now to April is a good time for dividing it. It is one of the best of subjects for planting under trees.

**ACACIA FOR TOP OF CONSERVATORY WALL (H. B.).**—For so high a wall as 30 feet we do not think the Acacias would suit. A Julibrissin is the highest-growing we know, but *A. coccinea*, *laphocoma*, and *longifolia* are more suitable, the latter being very fine. *Tasmania Van-Volkemi*, which we have considerably over the length you name, would be very suitable for the upper part of such a wall, also some of the *Passifloras*, as *P. Comtesse Nesselrode*, also *Bignonia Tweediana*.

**BLOOD AS A MANURE (Provincial).**—It is a very powerful manure. Mix it with earth, and apply it fresh.

**CHYMOCOCCA EMPETROIDES (H. G.).**—It is a genus of *Thymelacées*, founded on a Cape plant by Meisner in De Candolle's "Prodromus," xiv., 665. It is a small shrub, laty and profusely branched, much resembling *Passerina filiformis* and *P. rigida*. It is altogether like a *Passerina*, except in having a globose, fleshy, probably red berry as large as a small pea. There is no book that includes "a complete list of florists' flowers and their different varieties." Such an enumeration would fill a thick folio volume.

**PHLOX MISS ROBERTSON.—Mr. J. Cocker**, nurseryman, Aberdeen, informs us that this Phlox was raised by him, and not by Messrs. Carter, as stated in "The Gardeners' Year-Book."

**VINE MILDEW (S.).**—If you have drained the border you have done all that can be done to destroy this pest. The best compound for you to use as a winter dressing is sulphur and soft soap, with a little tobacco liquor. Should the mildew appear during summer, dust the leaves with flowers of sulphur as soon as it is perceived. If you linewash the walls of the vinery, add 2 lbs. of sulphur to each pailful of the wash.

**PRUNING FIG TREES (Idem).**—The best time to prune them is late in the spring, but the overluxuriant shoots ought to have been stopped in summer, which would have caused two or three smaller fruit-bearing shoots to have formed.

**EPACRIS AND HEATHS PROPAGATING (J. H.).**—*Epacris* are propagated by cuttings of the tips of the shoots when about 2 inches long in spring or early summer, and *Heaths* are propagated by cuttings of the young shoots during summer, when they can be handled easily, and are 2 or 3 inches long. The pots for the cuttings should be half filled with drainage, and to within

half an inch of the rim with very sandy peat and silver sand, pressing firm. Water and press firm, and fill-up to the rim with silver sand, and after standing a day water again and press; after six hours put-in the cuttings round the sides about an inch apart, covering with a bell-glass or hand-glass, and place in a close pit or frame shaded from sun. Air should be admitted when the cuttings begin to grow, a little at first, increasing the amount by degrees. The main point is to keep them from damping, and yet maintain a close, moist atmosphere. You will find the propagation and treatment of the most desirable greenhouse plants in "The Greenhouse," which may be had free by post from our office for 10d.

**SOWING BRIAR HEPS (J. Bentley).**—Dividing the heps, sow the seeds in moderately rich soil out of doors, and cover three-quarters of an inch deep with fine soil. The situation should be open, and some of the plants may come up the first year, but more will come up the second. The seedling plants may in autumn be taken up and put-out in nursery rows 1 foot apart, and the plants 3 or 4 inches apart in the rows. In two or three years they will be fit for budding for dwarf.

**FORCED VINES FOR PLANTING-OUT (G. W. P.).**—Vines that have been forced are not suitable for planting, but they may be cut down to within a few inches of the soil, and a new and strong cane being produced, they are then eligible for planting-out; but we prefer young canes that have not been fruited. They start more freely, and sooner become established.

**MOSSY LAWN (J. T. S.).**—From now to the end of March, in mild weather, have the lawn well scratched with a new iron rake, moving it to and fro with force, so as to bring up and remove the moss. The more you remove the better; clear it off. In March give a good dressing of rotten manure or rich compost, spreading it evenly, and not more than half an inch thick. In April rake again well with the iron rake, removing any rough and unsightly portions of the manure and any stones, and with an early prospect of rain sow over it evenly 8 lbs. *Festuca duriuscula*, 12 lbs. *Cynosurus cristatus*, 8 lbs. *Festuca tenuifolia*, and 8 lbs. *Poa nemoralis sempervirens*, 8 lbs. Trifolium repens, and 4 lbs. Trifolium minus, in mixture for 1 acre. If you are troubled with birds, rake lightly with a wooden rake after sowing; if not, simply roll well; rolling should also follow the raking. Let the grass grow until the middle or end of May, then mow with a scythe, and afterwards keep under with the mowing machine. If the lawn is wet the moss would be disturbed by draining.

**DORYOPTERIS NOBILIS UNHEALTHY (L. M. S.).**—Your plant is probably kept too cool. It requires to be grown in a stove, and not only to be kept moist, but kept moist all round. We should repot it, and keep moderately moist for a time, or until it grows freely, then water abundantly; but it will not thrive unless you give it the temperature of a stove, or, at this season, 55° to 60° at night, and 60° to 65° by day.

**CHRISTMAS ROSE CULTURE (L. A.).**—Leave the plant where it is, and mulch round it with some partially-decayed leaves or rotten manure. You may divide the plant in spring, planting out in good, rich, light soil in a slightly-shaded border, and watering freely until the leaves turn yellow; but we do not advise dividing the plant unless it is large. As you want flowers at Christmas, we should not divide the plant unless you had a certainty of good divisions. We should procure plants now, which may be had through the principal nurserymen advertising in our columns, and plant them out in a border as above named. At the end of September, or early in October, take-up with good balls, placing in pots large enough to hold the roots nicely, using light fibrous loam, with a third of leaf soil, and assigning them a light airy position in the greenhouse. By this mode of treatment you may have them in flower at the time required. *Helleborus niger maximus* and *H. niger minor* are very desirable kinds, the latter flowering rather earlier than the former. For flowering at Christmas the Roman Hyacinth is good, having pure white Lily-of-the-Valley-like bells. Beyond Camellias and *Epacris* the Bride, we do not know what other white flowers would suit; except *Primulas*, especially the double white *Primula fimbriata* alba flore-pleno. White Camellias are *Alba plena*, *Comtesse Calini*, *Fimbriata*, *Mrs. Percival*, *Mathotiana alba*. You may have fine blooms of *Chrysanthemums*, growing the plants out doors up to October, and then removing to the greenhouse. White-flowering kinds:—White *Beverley*, *Carissima*, *Countess of Granville*, *Empress of India*, *George Peabody*, *White Globe*, *Hetty Barker*, *Isabella Bort*, *Madame Domage*, *Miss Marchaux*, *Mrs. G. Rundie*, *Norma*. These are large-flowered *Pompons*: *Marabout*, *Mlle. Martha*, *Middle*, and *White Trevena*. You will need to keep them cool, in order to have them in flower so late.

**LAPAGERIA ROSEA PLANTING OUTSIDE (A. B. P.).**—The *Lapageria* would not suit for planting in a border outside the conservatory, as the shoots come directly from the root, and it would not answer to cut those away to encourage the development of the other shoots. Could you not make a border, and so plant inside the house? You would have a much better result.

**CYCLAMEN SEEDLINGS NOT THRIVING (A Puzzled Amateur).**—In your greenhouse, in which *Primula*, *Heaths*, and *Camellias* thrive, *Cyclamens* ought to flower well, and we can only conclude you have erred in their summer and autumn treatment. In "The Greenhouse," which you can have by post from our office for 10d., you will find full particulars of the treatment of *Cyclamens*. Your treatment must be very singular, as you write of "some corms uncovered, some covered, some nearly dry, some seldom watered, others more freely." But you furnish us with no data to enable us to judge whether your treatment is right or not.

**APPLE TREES BARKED BY SHEEP (J. D.).**—As your trees are seven or eight years old, they have mostly good-sized stems, and as sheep rarely bark trees so completely as rabbits, we expect that enough of the inner bark is left to enable the trees to recover. We would not advise anything being done to them, excepting, perhaps, wrapping them round with hay or straw bands to keep out the cold; but if severe weather occur before this is done, we would hardly take the trouble to do that, as in any case it ought to be removed in April. Healthy vigorous trees have the power of remedying many evils arising from accidents, and this being one, we would not by any means regard the trees as hopeless, unless the bark is gone wholly, and even then we would not give them up. We do not approve of any kind of dressing, especially anything of an acid or caustic nature; but if their appearance is offensive, you might paint them over with ordinary mud or clay, if it contains nothing hurtful to vegetation. Healthy vigorous trees outlive a good deal of bark-gnawing. Usually it is the repetition of the injury that kills. We have plenty of instances of the latter.

**LIME WATER FOR EXPELLING WORMS (T. G.).**—Use clear lime water, made by placing 1 lb. of fresh-slaked lime in three gallons of water, stir-up in a cask, allow the whole to stand forty-eight hours, then stop the holes in the pots with clay, and deluge the soil with the clear liquid. The holes in

the pots should be opened after the soil has been flooded with the lime water three hours. The lime water does not injure any *Ferne* that we have employed it for, and we do not think it would hurt yours.

**WORMS IN BULB POTS (S. T.).**—Water with lime water.

**NAME OF GRASS (A Working Lady).**—The dried specimen of grass you sent us is, we think, *Erianthus Ravenae*, a very fine silvery-plumed sort, but not equal to the Pampas Grass. A bulbous plant, popularly known as "the Onion Plant," we do not know, nor can we make out from your description. Send us a flower when the plant comes in bloom.

**NAMES OF PLANTS (J. G.).**—*Chimonanthus fragrans*, Japan Allspice. It was introduced from China by Lord Coventry in 1799. (*E. W. L.*)—*Palomita fruticosa*, Jerusalem Sage.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### BRISTOL POULTRY SHOW.

THIS was held on the 16th, 17th, and 19th inst. in the Rifle Drill Hall. The entries of poultry amounted to upwards of 850, those of Pigeons to some 200 more. A full report from the pen of "WILTSHIRE RECTOR" will appear next week. The following awards were made:—

**DORKINGS (Coloured).**—*Cockerel*.—1 and 2, L. Patton, Hillmore, Taunton. 3, T. C. Burnell, Micheldever. *he* and *c*, Mrs. Wolcombe, Stamford Rectory. *Pullets*.—1 and Cup, Henry Lingwood, Needham Market. 2, W. W. Rutledge, Kendal. 3, A. Darby, Bridgwater. *he*, Mrs. A. Willcox, Nailsea Court (2). *c*, L. Patton.

**DORKINGS (Coloured).**—*Cock*.—1 and Cup, Mrs. Wolcombe. 2, Rev. H. F. Hamlyn, Combe St Nicholas. 3, J. Longland, Grendon. *Hens*.—1 and 3, L. Patton. 2, J. Longland.

**DORKINGS (Silver-Grey).**—*Cockerel or Cock*.—1, O. E. Cresswell, Early Wood, Bagshot. *Pullets or Hens*.—1, O. E. Cresswell. 2, W. W. Rutledge. 3, L. Wren, Lowestoft. *he*, Rev. T. E. Cato, Wye Vicarage.

**COCHINS (Cinnamon and Buff).**—*Cockerel*.—1 and 2, W. A. Burnell. 3, Mrs. A. Tindal, Aylesbury. *Pullets*.—1, Mrs. A. Tindal. 2, A. Darby. 3, W. A. Burnell. **COCHINS (Cinnamon and Buff).**—*Cock*.—1 and Cup, Lady Gwydyr, Stoke Park, Ipswich. 2, C. Taylor, Gloucester. 3, A. Dickinson, Dextington. *Hens*.—1, Mrs. A. Tindal. 2, H. Feast, Swanen.

**COCHINS (Brown and Partridge).**—*Cockerel or Cock*.—1, G. Shrimpton, Leighton-Buzzard. 2, T. Stretch, Ormskirk. 3, C. Taylor, *he*, Hon. Mrs. Sugden, Wells. *c*, W. A. Burnell. *Pullets and Hens*.—1, F. Wilton. 2, G. Shrimpton. 3, T. Stretch. *he*, J. K. Fowler, Aylesbury. *c*, Hon. Mrs. Sugden; C. Taylor.

**COCHINS (White).**—*Cockerel or Cock*.—1, R. W. Beachy, Flinder, Kingskerwell. 2, W. Whitworth, jun. Longsight. 3, W. A. Burnell. *he*, Mrs. A. Tindal; J. Bloodworth, Cheltenham. *c*, J. Turner, Bath. *Pullets or Hens*.—1, Cup, and 2, R. W. Beachy. 3, C. Bloodworth. *he*, Lady Gwydyr; W. Whitworth, jun.; W. A. Burnell.

**BRAHMAS (Dark).**—*Cockerel*.—1 and 2, H. Lingwood. 3, L. Wright. *he*, T. H. Waterman, Anderton, Cornwall; J. Evans, Keyham (4); Hon. Mrs. A. B. Hamilton, Richmond; Woburn; T. Water, Keynham; L. Wright (2); G. Jones, Goldthorn Hill, Wolverhampton. *c*, H. B. Morrell, Cnamaw, Clyro; Hon. Mrs. A. B. Hamilton; J. Evans (2); E. Ensor, Bristol. *Pullets*.—1 and Cup, L. Wright. 2, H. Lingwood. 3, Rev. J. D. Peske, Laleham Vicarage. *he*, H. B. Morrell (4); J. Evans; L. Wright; H. Lingwood. *he*, E. Pritchard, Tettenhall, Wolverhampton; H. B. Morrell; W. Birch, Bansecle, Coventry; G. Jones; T. F. Ansell, Cowley Mount, St. Helens. **BRAHMAS (Light).**—*Cock*.—1 and Cup, Newham St Manby, Wolverhampton; 2, F. J. Cotterell, Birmingham. 3, Rev. A. Van Straubenzee, Tettenhall Vicarage. *he*, W. H. Crabtree, Levenshulme. *he*, J. T. Tanton, Gloucester; J. Evans; Hon. Mrs. A. B. Hamilton; E. Ensor; W. Hartley, Early, Skipton; L. Wright. *Hens*.—1, H. Lingwood. 2, J. Evans. 3, T. F. Ansell. *he*, H. B. Morrell. *he*, F. J. Cotterell; T. F. Ansell. *c*, E. Pritchard.

**BRAHMAS (Light).**—*Cockerel*.—1 and Cup, T. A. Dean, Marden, Hereford. 2, F. Haines, Palmer, Brix. 3, F. J. Cotterell. *he*, M. Leno, Markyate Street. *he*, Mrs. A. Williamson, Leicester (2); F. J. Cotterell. *c*, Mrs. A. Tindal. *Pullets*.—1, Cup, and 3, Mrs. A. Williamson. 2, T. A. Dean. *he*, P. Haines; J. Turner; H. Draycott, Leicester; E. Ellis, Chesham; W. H. Crabtree.

**BRAHMAS (Light).**—*Cock*.—1 and Cup, M. Leno. 2, W. H. Maynard, Holmeadow, Ryde, Isle of Wight. 3, Mrs. A. Williamson. *he*, Mrs. A. Williamson; W. H. Crabtree; J. Bloodworth, Cheltenham; J. Mitchell, Mosely, Birmingham. *c*, J. R. Rodbard, Wington. *Hens*.—1 and Cup, Mrs. A. Williamson; J. R. Rodbard. 3, F. J. Cotterell. *he*, Mrs. Turner, Avon, Ringwood; F. Crook, Forest Hill.

**SPANISH.**—*Cockerel*.—1, Cup, and 3, E. Jones. 2, J. R. Rodbard. *he*, J. Barry, Bristol; J. R. Rodbard. *he*, E. Jones; G. K. Chilcot; A. Darby. *c*, F. Cooper, Henley; A. Jones, Stapleton; J. R. Rodbard; Miss E. Browne. *Pullets*.—1, Cup, and 3, E. Jones. 2, Mrs. E. Allsopp. *he*, G. K. Chilcot, Cotnam; T. Bamfield, Brandon Hill, Bristol.

**SPANISH.**—*Cock*.—1, W. R. Burt, Newport Pagnell. 2, E. Jones. 3, T. Moore, West Bute Docks, Cardiff. *Hens*.—1, A. Darby. 2, Mrs. E. Allsopp. 3, E. Jones. *he*, T. Bamfield.

**HAMBUROS (Gold-spangled).**—*Cockerel or Cock*.—1 and Cup, J. Buckley, Taunton, Ashton-under-Lyne. 2, H. Beldon, Gostcock, Bingley. 3, W. A. Hyde, Hurst, Ashton-under-Lyne. *Pullets or Hens*.—1 and Cup, H. Beldon. 2, J. Buckley. 3, J. Robinson. *he*, W. A. Hyde.

**HAMBUROS (Silver-spangled).**—*Cockerel or Cock*.—1, Ashton & Booth, Manchester. 2, H. Beldon. 3, J. Fielding, Newchurch, Manchester. *Pullets or Hens*.—1 and *he*, J. Robinson, Lindley, Otley. 2, J. Fielding. 3, Miss E. Browne. *he*, Ashton & Booth; Miss E. Browne, Chardleigh Green. *c*, J. Carr, Swansea; H. Beldon.

**HAMBUROS (Gold-pencilled).**—*Cockerel or Cock*.—1 and 2, H. Beldon. 3, W. Speckman, Nantwich. *he*, T. Edmunds, jun., Tolnes. W. J. M. Gregory, Weston-super-Mare. *Pullets or Hens*.—1, J. Walker, Bristwith, Ripley. 2, J. R. Rodbard. 3, H. Beldon. *he*, Weston-super-Mare. *c*, H. Beldon. *c*, C. Bloodworth, Cheltenham (2).

**HAMBUROS (Silver-pencilled).**—*Cockerel or Cock*.—1, Withheld. 2 and 3, H. Beldon. *Pullets or Hens*.—1 and 2, H. Beldon. 3, R. H. Roe, Swansea.

**HAMBUROS (black).**—*Cockerel or Cock*.—1, Rev. W. Serjeantson, Acton Ennall Rectory, Shrewsbury. 2, H. Maskery, Brow Hill, Leek. 3, H. Beldon. *Pullets or Hens*.—1 and 3, Rev. W. Serjeantson. 2, T. Bush, Bristol. *he*, H. Beldon.

**GAME (Black-breasted and other Reds).**—*Cockerel or Cock*.—1 and Cup, S. Matthew, Stowmarket. 2, W. T. Lovering, Capra, St. Austel. 3, J. Cook, Worcester. *he*, J. Palmer, Wednesbury. *he*, W. H. Stagg, Netheravon, Pewsey (2); J. Forsyth, Wolverhampton. *Pullet or Hen*.—1, J. Cook. 2, S. Mathew. 3, G. Cotton, Sanningdale, Berks. *he*, W. H. Stagg; H. Lotan, Oundle; Rev. H. Helyar, Pendomer Rectory, Yeovil.

**GAME (any other variety).**—*Cockerel or Cock*.—1, S. Mathew. 2, P. A. Beck, Guilefield, Welshpool. 3, G. Lunt, Market Drayton. *he*, Dr. W. K. Bullmore, Falmouth; H. Julian. *Pullet or Hen*.—1 and Cup, Hon. and Rev. F. Dutton, Windrush Rectory, Burford. 2, Mrs. A. Tindal. 3, H. P. P. Price, Caatio Madoc, Brecon. *he*, Mrs. A. Tindal; J. Oscriff.

**MALAY.**—*Cockerel or Cock*.—1, J. Hintou, Warminster. 2, F. Sahin, Birm-

THIS was held on the 14th and 15th inst., in the Assembly Rooms, and far exceeded, both in quantity and quality, any other of the Society's shows. The classes of *Spanish, Dorkings, Brahmas* (Light and Dark), *Game fowl, Geese, and Turkeys* were especially fine. The *Pigeons*, numbering nearly 170 pens, were shown in themselves, the quality of the *Carriers, Barbs, and Jacobins* being equal to any English or Scotch great show. *Pige Birds* were extremely good. To add to the amusement of the public, a flying match of *Homing Pigeons* was made from Queenstown to Cork, Mr. Jeffries, Antwerp, winning four prizes out of six. The industrious and painstaking Committee retained their reputation for ability and courtesy in managing their Show.

EXTRA CLASSES.  
 GAME.—Cock.—Cup, T. O'Grady. 2, J. C. Cooper.  
 GAME.—Hens.—Medal, J. C. Cooper. 2, M. C. Cramer.  
 GAME BANTAMS.—Duckwings.—Medal, J. C. Cooper. 2, J. Dowling.  
 TURKEYS.—Young.—1, J. C. Cooper. 2, Miss H. McCraith. *hc*, Capt. Bury;  
 Miss L. King. *c*, Viscountess Doneraile; Miss L. King.  
 Medal for greatest number of points in poultry class.—J. C. Cooper.

**POUTERS—Cocks.**—1, J. H. Perrott. 2, F. W. Zurhorst. *hc*, J. Hawley. *c*, J. Lloyd. **Hens.**—1, J. Lloyd. 2, J. Hawley. *hc*, J. Hawley; J. H. Perrott; F. W. Zurhorst.

J. Rumley. *Hens*.—1 and c, J. Jeffries. 2, W. J. Rumley. *hc*, G. A. Wherland.  
 BARDS—Cocks.—1, J. Hawley. 2, W. J. Rumley. *vhc*, J. Jeffries (2); W. H.  
 Bennett (2). *hc*, T. O'Grady; H. L. Tivy (2). *Hens*.—1 and c, J. Hawley. 2, W.

OWLS.—1, J. Dowling. 2, T. O'Grady. c, J. Jeffries.  
TRUMPETERS.—Medal, W. J. Ramley. 2, J. H. Perrott. c, J. Dowling; J. H. Perrott.

R. W. Smith (2). c, T. O'Grady.  
FANTAILS.—1 and 2, W. J. Rumley. hc, J. Hawley.  
NUNS.—1, J. Hawley. 2, J. Dowling. hc, W. J. Rumley; J. Hawley.

MAGPIES.—1 and *ac*, W. J. Rumley. 2, J. Hawley.  
TUMBLERS.—1, J. Hawley. 2, W. J. Rumley. *hc*, W. J. Rumley; J. Hawley.  
DRAGOONS.—1, J. Dowling. 2, J. K. Milner. *vhc*, J. Jeffries. *hc*, W. J.

ANY VARIETY NOT CLASSED.—1, W. J. Rumley (Archangels). 2, J. Hawley (Antwerps).

SELLING CLASS.—1, J. Dowling. 2, 3, and *hc*, W. H. Bennett (Owls and Black and Red Barbs). 4, J. K. Milner; W. H. Bennett (Red Barbs). 5, W. J. Rumley.

EXTRA CLASSES.  
CARAIERS.—Young.—Medal, J. Jeffries. 2 and *vhc*, G. A. Wherland.  
BARKS.—Any colour except Yellow.—Young.—1, G. A. Wherland. 2 and *vhc*,

FLYING MATCH.—1, 2, 3, and 4, J. Jeffries. 5 and 6, L. P. Ryder.  
Medal for greatest number of points in Pigeon classes.—W. P. Rumley.

CAGE BIRDS.  
CANARIES—*Belgian*.—I, D. Ryan. 2, Miss A. Ryan. *hc*, R. Lane (2); W. Scannell. *c*, W. Scannell; W. Beck.  
CANARIES—*Norwich*.—I R. Lane. 2 T. J. Babington.

BULLFINCHES.—1, L. P. Ryder. 2, J. Dowling. *hc*, J. Dowling; P. Keating;  
J. Flynn.  
GOLDFINCHES.—1, L. P. Ryder. 2, J. Hobson. *hc*, W. J. Kelly. *c*, J. Dowling;

GOLDFINCH MULES.—1, R. Bull. 2, J. Dowling. *vhc*, R. Jones; W. K. Magill; Mrs. Clarke; R. Bull. *hc*, W. K. Magill. *c*, J. Hobson.

**LINNET MULES.**—1, W. K. Magill. 2, J. Dowling.  
**BLACKBIRDS.**—1, P. Keating. 2, J. Carney. *etc.* J. Twomey. *hc.* W. O'Connor.  
**THRAUSHERS.**—1, L. P. Ryder. 2, J. Dowling. *hc.* R. Daly.  
**LARKS.**—1, R. Daly. 2, L. P. Ryder. *etc.* C. P. Johnson; R. Jones. *hc.* R. Lane; L. P. Ryder. 3, R. Lane.  
**PARROTS.**—1 and 2, D. A. Bayly (King and Grey). *hc.* D. A. Bayly (Rosewing and Rosella); F. Buck.  
**ANY OTHER VARIETY.**—1, J. Lloyd (Jay). 2, D. A. Bayly (Cockateel).  
 Medal for greatest number of points in Cage Birds.—L. P. Ryder.  
**JUDGES.**—*Poultry and Pigeons:* Mr. C. F. Staunton. *Cage Birds:* Mr. T. O'Grady.

## BROMLEY POULTRY SHOW.

This was held on the 13th and 14th at the Rifle Drill Hall. The poultry entries numbered 558, those of the Pigeons 200, and the Canaries 164.

In both the *Dorking* classes Mr. Lingwood deservedly obtained the first prize. We think it is not the first time these birds have carried off the double honours for their owner. The class for hens was a very good one, the competition being very close for the second and third prizes. *Cochins* followed, cock and hen together, and all the varieties crowded into one class. The entries numbered twenty-four: we hope this will encourage the Committee to do something better for them at their next show. Whites were first and second, Partridge third. The first-prize birds were an exquisite pair and well deserved their position. We were also very pleased with a pair of Blacks, highly commended, belonging to the Rev. J. G. B. Knight. The *Brahma* classes were all large ones. In Dark cocks the first-prize bird was a grand one, but out of condition; the second a big bird; the third mottled on the breast, but in all other points we like him as much as the winner. The hens, with the exception of the first-prize birds, we did not much like. The second-prize birds were good, but not well matched. The Light cocks, with a few exceptions, were only of moderate quality. The cup hens were good in size, well feathered on the leg, but deficient in markings. In the *Spanish* class a few good specimens were to be found. The first-prize cock was a neat bird and in good condition. The second pen was rightly placed, but we did not like the third. Had the cock in pen 155 been in better trim the position of these pens would have been transposed. The first prizes in both the *Game* classes were taken by Mr. Matthews with birds worthy of the owner's reputation. The *French* classes were both good; in *Houdans* Mr. Dring secured both prizes with birds that we have noticed on previous occasions. In *Crève-Cœurs* Mr. Wood was first with a good cock, but the second-prize pen contained the best hen. The *Hamburgs* were numerous, but we could only find two or three good pens. The Black Red *Bantam* class contained twenty-nine entries. The competition was close between the first and second-prize pens; the rest were very poor. The Brown Red class in quality was not better than the Black. In the *Any other variety* Mr. Entwistle showed two very beautiful pens of Piles, which were first and second. The class for *Any variety*, confined to the county of Kent, was a very interesting one, showing that Kent, which has taken the lead in so many of our English pursuits, is not behind in poultry-breeding. *Turkeys* were unusually well represented, and the classes for *Ducks* contained some admirable specimens.

The *Pigeon* classes generally secured good entries. The class for Pouters contained fourteen entries, and many extremely fine birds were to be found, a good Red winning. A capital class of Carriers followed, a grand Black cock of Mr. Maynard's winning in a very strong competition. In Barbs Mr. Maynard again carried off all the prizes. The Tumbler class contained only three entries. The Fantails were a delightful class; but we fear the yellow sand at the bottom of the pens would not improve their condition for future exhibitions. Jacobins deserve special notice. We could not find a bad bird in the class. Some large classes of Working Antwerps completed a very successful Exhibition.

**DORKINGS.**—Cocks.—1 and Cup, H. Lingwood. 2, Hon. J. Massey. 3, Viscount Turnour. *hc.* C. Ratcliffe. 4, C. M'Niven. *c.* F. Parlett; T. Charrington. *Hens.*—1, H. Lingwood. 2, H. Mills. 3, E. Wilson. *hc.* Viscount Turnour; J. H. Patney; Hon. J. Massey; H. Stead.  
**COCHINS.**—1 and Cup, H. E. Prior. 2, R. S. S. Woodgate. 3, T. W. Anna. *hc.* Rev. J. G. B. Knight; J. S. Rev. W. White; G. Dowling; Mrs. Brassy.  
**BRAHMS.**—Dark.—Cocks.—1 and Cup, H. Lingwood. 2, H. W. Potter. 3, Mrs. J. G. Heppburn. *hc.* F. Hones; Rev. J. N. Heale; J. Watts. *c.* H. Giddard. *Hens.*—1 and Cup, H. Lingwood. 2, T. F. Ausdell. 3, J. Watts. *hc.* F. Lake; Hon. Mrs. A. B. Hamilton. *hc.* G. W. Potter; Hon. J. Massey; F. Lake; J. Palmer; J. W. Perkins; C. M'Niven. *c.* Mrs. E. Fryer; H. Kennett.  
**BRAHMS.**—Light.—Cocks.—1 and Cup, H. Lingwood. 2, G. W. Potter. 3, Capt. W. Savile. *hc.* H. Chawncz; *hc.* Rev. F. T. Scott; Mrs. Haigh. *c.* H. M. Maynard. *Hens.*—Cup, H. M. Maynard. 2, Mrs. F. Chesbire. 3, E. J. Reeves. *hc.* J. Long. *hc.* Rev. F. T. Scott; R. Bird. *c.* Rev. F. T. Scott.  
**SPANISH.**—1, Mrs. Tonkin. 2, E. J. W. Stratford. 3, Mrs. Allsopp. *hc.* F. James.

**GAME.**—Red.—Cup, S. Matthew. 2, J. Jekan. 3, F. Ward. *hc.* H. E. Martin; A. J. Matthews. *Any other variety.*—1, S. Matthew. 2, E. Rice. 3, F. Harding.  
**HOUDANS.**—1 and Cup, J. Dring. 2, H. H. Dombard. 3, W. Outlack. *hc.* J. W. Noyle; Mrs. Vallance; J. Long. *c.* M. Sandford.  
**CREVEUR LA FLECHE.**—Cup, R. B. Wood. 2, W. Dring. 3, Mrs. Cross. *hc.* W. Outlack. *hc.* E. Randall; G. W. Hibbert; J. Walton.  
**HAMBURGS.**—Pencilled.—1, W. Speakman. 2, G. J. Duckworth. 3, W. K. Tickner. 4, E. L. Stotham. *Spangled.*—Cup, W. A. Hyde. 2, G. J. Duckworth. 3, W. K. Tickner. 4, T. Walker. *hc.* Ashton & Booth; C. Holstead; C. E. L. Lacey. *c.* T. Boulton; J. Ackerman. *Black.*—1, Rev. W. Sergeantson. 2, T. A. Wright. 3, R. S. S. Woodgate. T. Walker.

**GAME BANTAMS.**—Black Reds.—Cup, W. Bontcher. 2, W. Adams. 3, W. F. Entwistle. *hc.* T. W. Anna. *c.* W. F. Entwistle; F. James. *Brown Reds.*—1, S. and J. J. S. Ephens. 2, Miss E. Long. 3, W. F. Entwistle. *hc.* B. Mollett. *c.* W. S. Marsh. *Any other variety.*—1 and 2, W. F. Entwistle (Piles). 3, G. S. Salisbury (Duckwings). *hc.* R. J. Symonds; J. Bateman; M. Sandford; G. Gapsbury.

**BANTAMS.**—2, M. Leno. 3, R. S. S. Woodgate. *hc.* G. B. Francis; R. H. Ashton; G. P. Ladd. *hc.* J. Watts; T. E. Thirle; G. P. Ladd.  
**ANY OTHER VARIETY.**—1, G. W. Boothby (Gold Poles). 2, A. Silvester (Golden Polish). 3, J. Long (Plymouth Rocks). 4, F. Harding (Malay). *hc.* J. Hinton; R. S. S. Woodgate. *hc.* J. Watts; A. Ward; A. Kitchen; E. J. Reeves; S. P. Broad (2).

**ANY VARIETY.—Open to Kent only.**—1, R. Cheeseman (Dorkings). 2, G. Dowling (Light Brahmas). 3, E. J. W. Stratford (Houdans). *hc.* W. Dring; Col. F. C. Hassard. *hc.* E. Goodwin; S. F. Jackson; J. Jekan; J. B. Lawber; J. Long. *c.* H. A. Watchurst. *Open to Parishes in Bromley Union only.*—1, Miss E. Long (Various). 2, C. W. Gedney (Light Brahmas). 3, T. Charrington (Dorkings).

**TURKEYS.**—1, F. H. Jaason. 2, H. J. Gannell. 3, T. M. Derry. *hc.* F. Ward (8).

**SELLING CLASS.**—1 and Extra, H. Brown (Spanish). 2, H. A. Watchurst (Cochin). 3, J. Watts. 4, M. Leno (Light Brahmas). *hc.* G. W. Potter; E. J. W. Stratford; F. Webber. *hc.* M. Leno; G. A. Angier; F. Hones; F. E. Arer; E. Rice; H. Thomas; Rev. T. Cochrane. *c.* J. Sleep; H. Mills. *Cockor Drake.*—1, A. Hews. 2, F. James (Spanish). 3, G. Shrimpton (Cochins). 4, F. E. Arer (Rouens). *hc.* Rev. S. N. Heale; A. Kitchen; W. Potter; R. Harvey; J. Chisman; J. Long; E. J. W. Stratford; C. H. Webb. *c.* M. Leno (2); J. G. Heppburn. *Pair Hens.*—1, J. Watts. 2, E. J. W. Stratford. 3, Mrs. E. Allsopp (Cochins). 4, E. M'Farland (Dark Brahmas). *hc.* E. M'Farland. *hc.* H. J. Gannell; J. Atkinson; G. D. Harrison; T. Goodwin; F. Rice.

**DUCKS.**—*Any variety or Rouen.*—1 and Extra, J. Rodwell (Aylesbury). 2, R. Gladstone, jun. (Rouen). 3, N. Edgill (Aylesbury). 4, F. Lake (Aylesbury). *hc.* H. C. Christy. *Any other variety.*—1, W. Bontcher (Mandarins). 2 and 3, M. Leno. *hc.* E. Wilson; Rev. W. Sergeantson. *hc.* F. S. Jackson; G. S. Saunbury; C. L. Sutherland.

## PIGEONS.

**POUTERS.**—1 and *hc.* M. H. Gill. 2, Mrs. Ladd. *hc.* M. H. Gill; Mrs. Ladd. *c.* R. Ashton (2).

**CARRIERS.**—Cup, H. M. Maynard. 2, M. H. Gill. *hc.* M. H. Gill; H. M. Maynard. *c.* Col. F. C. Hassard; J. Baker.

**BARBS.**—1 and 2, H. M. Maynard. *hc.* J. Baker. *c.* J. Baily, jun.

**TUMBLERS.**—1, J. Baker. 2, Mrs. Gill.

**SPANISH.**—1 and 2, H. M. Maynard. *hc.* W. H. Tomlinson. *hc.* Rev. W. Sergeantson. *c.* A. A. Vander Meer.

**DRAGONS.**—1, J. Baker. 2, W. Gamon. *hc.* W. H. Mitchell.

**JACOBIENS.**—1, G. Roper. 2, J. Baker. *hc.* A. A. Vander Meer. *c.* G. Mann.

**ANTWERPS.**—1 and 2, W. Gamon. *hc.* G. Piper.

**TURBITS.**—1, J. Baker. 2, C. A. Crafer. *hc.* G. Roper.

**OWLS.**—Cup and 2, J. Bowes. *hc.* E. W. Van Seden. *hc.* L. Allen; H. W. Webb.

**ANY OTHER VARIETY.**—1, J. Bowes (Archangels). 2, G. Holloway (Pigmies). *hc.* P. R. Spencer. *hc.* A. Silvester; J. Baker. *c.* F. W. Baxter.

**ANTWERPS.**—Four Working.—Cup, Sparrow & Cotton. 2, C. L. Sutherland. 3, J. Haydon. *hc.* W. Kennedy. *hc.* A. Bentley; E. F. Wilson. *c.* Lady Lubbock.

**SELLING CLASS.—Single Bird.**—1, A. Bentley. 2, A. A. Vander Meer. *hc.* W. H. A. Miller. *hc.* M. H. Gill; H. Thurlow. *c.* W. G. Tancock; Mrs. S. Lord. *Pair.*—1, W. G. Tancock (Carriers). 2, E. Stocker (Carriers). *hc.* Col. F. C. Hassard. *hc.* J. Bowes. *c.* J. Baily, jun.

**JUDGES.**—*Poultry:* Mr. Teebay. *Pigeons:* Mr. Allsop, of Birmingham. *Canaries:* Mr. Willmore.

## NETTLES FOR TURKEYS—EGG-PRODUCERS.

In mentioning "nettle tops" for young Turkeys, &c., is the stinging nettle only meant, or the different Labiates known by so many people as "dumb nettles?" [Only the stinging nettle. —EDS.]

I see by your answer to "C. L. M." in to-day's issue, you think him fortunate in having six eggs a day from forty-five hens. I have the same number from ten hens of the Pheasant Cochins breed. I have had since January 1st till to-day inclusive (January 15th) eighty-four eggs. The first three days of the year there were three or four a day, then increasing—twice seven eggs, twice eight in the day.—M. A. WEBB.

## POUTERS, ANY OTHER COLOUR OR MARKING CLASS.

I AM glad to see Mr. Huie and "Go-AHEAD" supporting this indispensable class; without it all the standard colours would dwindle to nothing. They are, as a rule, the most perfectly shaped and, when Meales or Chequers, the most beautifully-marked birds one sees. I have just returned from Aberdeen Show, which, as far as Pouters were concerned, was the Show of the year. In the prize list there were classes for Any other colour, and I may say they contained some of the best birds in the Show. The first-prize cock, a Mealy, was splendidly marked. This bird once belonged to Mr. Volkman, and with a mealy and a splash hen he had bred some of his finest Blues, amongst them the cup bird at the Crystal Palace Show of 1872. I am not aware whether Mr. Volkman remains in the fancy, but it is well known that he was anything but an advocate for the use of off-colours; yet for years, while writing to this effect, he still continued to breed and show these birds. From this and other instances I could name, it will be seen that those who most despised this class were unable to do without it. Therefore I trust committees of shows and fanciers in general will not follow "WILTSHIRE RECTOR'S" example in attempting to kick down the ladder by which he, or perhaps it would be truer to say others, have risen.—J. E. SPENCE.

**NORTHAMPTON SHOW.**—Liberal prizes are offered for poultry, Pigeons, Rabbits, and Cats, besides twenty silver cups. The

only mistake we note are the two Dorking classes, in which Dark, Grey, and White are made to compete. No judge ought to be asked to decide upon the comparative merits of such an unfair mixture. There were 1400 entries last year, and probably there will be more this, for the management has always been very good.

### RABBIT PRIZES AT NORTHAMPTON SHOW.

IN answer to "R." in your Journal of the 15th inst., I am requested to state that the cause of the schedule for Rabbits not being quite so liberal as last year is precisely that hinted at by your correspondent in the fourth paragraph of his letter. Last year a number of fanciers and several of the Committee subscribed specially for the cups, but a defaulter in one of the classes was a loss to the Committee of three guineas. This year we have but one cup promised, and but one subscription; and it was decided that this should go to the Angora class. A number of fanciers may say they would have been pleased to subscribe; but I have always found when recourse has been had to an appeal of this sort, that the proffered support has been so hampered with restrictions as to make it impossible for the Committee to avail themselves of it. But if your readers are inclined to give the Committee any special sum as a prize for any particular class without any other restriction than that the sum shall go as an extra prize, I shall be most happy to correspond with them.

As regards the class for the "Heaviest," it has been a loss; and the Committee considered it best to reserve the money as extra prizes, should any of the other classes display unusual merit.—WILLIAM HUMPHREYS, Secretary.

### THE NATIONAL PERISTERONIC SOCIETY'S SHOW.

THIS was on the 13th inst., being for the fifth time held at the Crystal Palace. It fully sustained the high repute of this Society. We hope fanciers will witness such exhibitions heralding-in "many new years" to come, inasmuch as they present peculiar characteristics, standing alone, or nearly so, as non-competitive gatherings. The conditions of a non-competitive show necessarily bring together some selected specimens of the loft, whilst in this amateur exhibition the different varieties of Pigeons massed together are to the public, and especially to the young fancier, a good practical lesson on the materials that constitute practically a breeding stud of Pigeons.

Mr. Esquilant's contribution of twenty Blue and Powder Blue Owls, a strain he has possessed for many years, greatly pleased the cognoscenti. Opposite to it stood another most interesting pen of Owls, Yellow, and of the old English type. We may at last look forward to the resuscitation of this choice variety, and thank Mr. Whitehead for his efforts.

Mr. South contributed Dragons, Blue, Silver, Yellow, and Red, also Turbits, Jacks, and Baldheads. We praise Blues and Silvers, yet keep a little extra admiration for Yellows. A just critic would, on viewing Mr. South's pen of Yellow Dragons, so level in quality and up to the standard for colour, declare the fancy justified in selecting the soft richness of the yellow tint as the *richerché* colour of the Pigeon. Mr. Stevenson, of Tooting, a recently-elected member, sent his first contribution, a good pen of Yellow Turbits. Mr. Bull's Jacobins, good in colour, were not lacking in quality.

English Pouters found but one exhibitor—Mr. Esquilant. It appeared that the Pouter, like the prophet, is not esteemed in his own country, for we observed no less than three foreign varieties of this bird sent by Mr. Vander Meersch. The same gentleman also penned a good collection of Fantails, which variety was also contributed by Mr. Esquilant.

The critical Short-face fanciers who visited the Palace were not disappointed. They lingered long before the pens of Messrs. Esden, Ford, Merck, and Heritage, for there stood before them the twenty Black Mottles of Mr. Esden, all of the highest quality, side by side with his beautiful Black, Yellow, and Red Beards. Then followed Mr. Ford's Almonds, forming of themselves a sight worthy of a visit to Sydenham; then Mr. Merck's two pens of old and young birds, a splendid collection; then Mr. Heritage's, though last not least, a pen of birds as near the standard for head and beak as they can be bred. It speaks well for the fancy that a bird requiring for its production so much patient and scientific care should be so numerous and so beautiful as all the old fanciers were delighted to affirm. Some good Baldheads were shown by Mr. Newman; Jacobins and Turbits of a high class by Mr. Easton, of Hull.

Mr. Jones had pens of Owls, English and Foreign, also some choice Turbits. Mr. Tegetmeier sent a dozen Blue Dragons, and a pen of the now fashionable Homing Flyers. The fine condition and super-excellent quality of his Dragons could not fail to arrest the observation of a fancier. Mr. Hedley's Barbs contained many of the known specimens in the fancy, and some

young birds worthy of their parents. Mr. Gill also exhibited a pen of very good Barbs.

The Toy varieties were not forgotten. Four were supplied by Mr. Vander Meersch; Black Fantails by Mr. Whitehead; Archangels by Mr. Jones; Messrs. Huggins, and the Honorary Secretary, Mr. S. C. Betty, also added their quota of Yellow and Red Dragons.

At all previous shows organised by the National Peristeronic Society Carriers have been in force. In fact they have, on all these occasions, formed the *pièce de résistance*, which no fancier, however keen his appetite, has pronounced stunted or deteriorated. The list of the Carrier exhibitors comprised the names of Col. Hassard, Messrs. Square, Heritage, Ord, Hedley, Crisp, Feltham, and Baunton Ford. That the Carrier is the perfect type of Pigeon beauty was unmistakably apparent in some birds, principally young ones, shown by Col. Hassard, Messrs. Square, Heritage, and Hedley. One young Black cock, the property of Mr. Square, is not far from being the best bird of his season. Col. Hassard's collection comprised Blacks, Duns, Blues, and Silvers, just the type of bird we recollect he possessed some twelve years ago, and which the fancy gladly welcome again. Mr. Heritage's row of twelve Carriers, exhibited singly, would, unsupported, have rendered the Carrier contingent complete. Exhibited together with the high-class birds of Messrs. Hedley, Baunton Ford, Ord, and Crisp, the Carrier element crowned the success of the Show.

### ABERDEEN POULTRY AND PIGEON SHOW.

(Concluded from page 67.)

THERE were eighteen entries in the class for young Blue cocks bred in 1873. Not only was this the largest class, but it contained some birds of very fine quality. No. 349 (J. C. Lyell), was a bird of perfect marking and large crop, but with too heavy limbs. No. 351 (T. Rule), also well marked, but faulty in style of limb. No. 353 (J. C. Lyell), first prize; some discussion was created as to whether he was entitled to his position, but he was without doubt a good bird and perfect in marking, with finely-covered legs and toes. Being only a late August bird he bids fair to turn out fine. No. 357 (R. Fulton), was highly commended, and a good-looking cock all over. No. 360 (G. Ure), commended, wanted pinion and had an imperfectly-cut moon, but in style he left little to be desired. No. 361 (A. Frame), wanted hib and pinion to set-off an otherwise handsome young cock. No. 362 (J. Mitchell), was looked upon as very matured for a young one. Nos. 363, 364, third-prize, 365, and 366, second-prize, were all Mr. G. Ure's, and all fine. No. 363 might have changed places with one of the prize birds, being well marked and extremely handsome.

Young Black cocks were seven entries, and the first was No. 367 (D. Stewart), highly commended, finely marked, and thin in girth. He seemed rather ill on the last day of the Show. No. 368, second prize, was a great bird to be only five months old, his catalogue age. Some doubts were expressed as to his being a bird of 1873, but we heard his owner (Mr. G. Schaschke) give the date of his hatching—viz., the 4th June—from which we calculate that he ought to have been entered as seven months old. No. 370 (J. Grant), third prize, was a thick bird, not well marked, and too rough in his leg-feathering. No. 371 (F. McCrae), was small but neat and evenly marked, though dull in colour. No. 372 (G. Ure), the first-prize bird and also winner of the medal for young cocks, was a grand, upstanding, slender, and long-limbed bird, but scarcely correct in marking. No. 373 (J. Mitchell), commended, was a good style of bird, well marked and long, not exactly right in shape of limb.

Young Red cocks. We would designate this class, which contained eight pens, as the worst as regards Pouter qualities in the Show. No. 376 (J. Wright), was no doubt the best among them as to length and shape, but almost solid-breasted, without pinion, and of only fair colour. None of the others warrant a minute description.

Of the five young Yellow cocks the three shown by Mr. Ure were first, second, and third, but none of the five was perfect in colour. In other respects, however, No. 385, the first-prize bird, was good, being a fine, upstanding, and particularly stylish cock. Had he been of a richer colour he might have been entitled to the silver cup for the best young cock in the Show. We have no doubt he will be heard of again.

Young White cocks brought out seven, and No. 387 (McGill Skinner), first prize, was not worthy of his place; we think either No. 388 (R. Fulton), second prize, or No. 392 (J. White), third prize, were in our opinion the best, but the latter had the fault of being slightly hog-backed, though otherwise a raking young cock. The quality on the whole in this class was good.

Blue Pouter hens of any age brought out ten entries, and the first on the list, No. 394 (D. Stewart), although unnoticed, was worthy of a prize, and certainly one of the best four in the lot being particularly handsome, thin in girth, and well marked. No. 395 (J. C. Lyell), commended, was also a fine hen with a capital bib and moon. No. 397 (A. H. Stewart), third prize, was

very dirty, but that could not conceal her fine points. She is such another as No. 394. No. 398 (G. Ure), highly commended, might have been more honoured and there would have been no complaints. Her crop was large for a hen and finely marked, with great length of feather and thin waist; the only fault she showed was foul thighs. No. 399 (R. Fulton), second prize. Looked at in front this hen was too heavy and wide, and, in our opinion, although a good bird not in the same list as either 397 or 398. No. 400 (G. Ure), first prize, was a grand hen in every respect, except a little too white on the crop. In shape and general appearance she was certainly the best in the class. This class was a very fine one on the whole.

Black hens, any age, were eleven pens. No. 405 (T. Rule), second prize, was a well-marked and glossy-coloured bird. No. 408 (A. H. Stewart), was unnoticed but worthy of a prize. We are quite surprised at the Judges overlooking her entirely; a bigger and handsomer hen could scarcely be, but she looked as if she had been kept in a coal cellar. Her almost only fault was being rather smoky in colour, but this should not have condemned her, being otherwise so good. She is one of Mr. Ure's breeding. No. 409 (F. McCrae), was commended, a heavy bird but well marked. No. 411 (G. Ure), first prize, a particularly handsome raven black hen, about perfect in marking, worthy of her position. No. 414 (G. Ure), third prize, also good in colour and marking.

Eight old Red hens came next, and the first of them, No. 415 (J. C. Lyell), highly commended, was a very long fair-coloured hen of correct marking. No. 416 (W. Ridley), first prize and cup. We recognised this one as first at Glasgow for the last two years. She is fair-coloured, very long in feather and limb, well marked, but does not show much crop, in the pen at least. No. 418 (R. Fulton), commended, was also mentioned at the late Glasgow Show. She is a bird of better colour than the two preceding ones, but much smaller, although a tidy, nicely-shaped hen. No. 419 (J. C. Lyell), was the best shaped hen of the lot, but failed in colour and marking, being too gay. The length, shape, and feathering of her legs were not to be beaten by any hen in the Show. No. 421 (A. Frame), third prize, was a good-coloured and well-shaped but rough-legged bird. No. 422 (John M. D. Brown), second prize, was an utter mistake, being only good in colour and marking on the crop. In other respects she was certainly the worst hen in the class.

Old Yellow hens were eight pens. No. 424 (A. H. Stewart), third prize, was of a faint colour but a long thin bird and fairly marked. No. 426 (R. Fulton), first prize. It was curious to observe how the Judges stickled for colour in one class, as in the second-prize Red hen, while in the next they awarded first prize to the worst-coloured Yellow in the class, a bird of a pale straw colour and chequered. She was a bird of good marking and style of legs, but drooped her shoulders too much. No. 427 (J. White), was very good in colour and marking, and was highly commended. She looked short-legged, however. We should have preferred No. 428 (G. Ure), the second-prize bird to the first, as she was of better colour and equally good in other respects. No. 429 (G. Ure), commended, was capital in style and rich in colour, but not so correctly marked.

The prizes for old White hens (eight entries) seemed to give satisfaction, and were gained as follows:—No. 430 (W. Ridley), first prize, a fine hen but she has seen better days. She is getting heavy in appearance. No. 436 (R. Fulton), second prize, a handsome thin-girthed bird, and No. 439 (W. Stiles) third prize.

Seven hens of Any other colour came next, and comprised No. 440 (J. C. Lyell), commended, a long stylish Blue-chequer. No. 441 (W. Hendry), highly commended, a White with a blue tail, which ought to have had a third prize instead of No. 443 (J. E. Spence), also a White with blue tail and hog-backed. No. 444 (G. Ure), third prize, a beautiful stylish sandy. No. 447 (J. Mitchell), first prize, a very fine Mealy, rightly placed at the top of the list.

The classes for young hen Pouters, birds bred in 1873, were all well filled and contained many first-rate in quality. The Blues were fourteen pens, the first prize going to No. 450 (G. Wallace), the winner also at Glasgow. She may be described as perfect in style, and the only fault she has is being slightly deficient in bib. Her breeder deserves credit for turning out such a beautiful bird. A. H. Stewart's highly commended pen, No. 451, was very handsome but not perfect in marking, wanting pinion on one wing and a better-cut moon. No. 453 (G. Ure), was unnoticed, but of a grand shape. In marking she showed a good moon but had slightly rough and foul limbs. No. 455 (G. Ure), second prize, was a very similar bird to the first-prize winner, but not so nicely marked, having one side with too much white. There were other very good hens in this class, as No. 448 (McGill Skinner), third prize, 452 (F. McCrae), of a fine style, and 456 (A. Frame).

There were nine young Black hens, and Mr. Ure took all three prizes. Between the first and second-prize birds there was little to choose, both were good in colour, marking, and shape, and both finely-cropped birds. The third-prize one was, perhaps,

a more stylish bird than either, but did not show nearly so well. Mr. Fulton's bird (No. 464), was of a good colour and nicely marked on the crop, but without pinions. She has fine long flights and well-shaped and feathered legs.

Young Red hens (eight entries) were better than the young Red cocks. No. 470 (J. C. Lyell), the best-coloured one in the class, was perfectly marked with clean stocking legs. She is within very little of the correct colour. No. 475 (R. Fulton), third prize, well marked, fair colour, and very showy, but imperfect in shape of limbs and wanting in long toe feathers. No. 476 (J. S. & H. Robb), first prize, was the biggest one in the class, but not fine in colour, though fairly marked.

Young Yellow hens (six entries) contained some very good birds. No. 478 (J. Grant), a long good-coloured bird, which we preferred to No. 479 (W. Thomson), the third prize bird, short in feather and too rough-legged. No. 480 (G. Ure), was first prize and winner of the cup for young hens. She is a good-coloured bird of good proportions, well marked except that she wanted pinions on her wings. No. 482 (G. Ure), second prize, was finely shaped but faint in colour and too gay on crop.

The ten young White hens contained some fair birds, and the first and third prizes went to J. Grant, Edinburgh, the second to G. Schaschke, Aberdeen.

There is no doubt there is an immense improvement in Pouters during the last few years. Anyone who remembers the first Glasgow Shows, about fourteen years ago, cannot fail to be struck with the altered style of the birds. The finely girthed and stocking-legged Pouters of the present day compare favourably with the rough-legged runty style so much in vogue before. In marking also there is a great change, and fine bibs, moons, and pinions are more the rule than the exception. Foul thighs are still rather prevalent and difficult to breed out. Gay birds are generally clean-legged, but when otherwise perfect in marks Pouters generally retain some foul feathers about the limbs. It seems the acknowledged practice, however, and to be tacitly understood, that these as well as snips on the forehead may be extracted as far as practicable, and if the Judges were to disqualify birds that had been so operated on they would have enough to do, for it was palpably plain that some dozens of them had been more or less plucked. The same may be said of the late Glasgow Show. It is well known that dressing goes on, and the Judges must just pretend not to see bare places at the roots of beaks, &c.—[We totally dissent from this opinion.—Ens.] We wish all success to the Northern Poultry and Pigeon Club of Aberdeen. Its Show has suddenly sprung up from the position of second class to the very front rank, a position which we hope it will long retain.

We are indebted to a correspondent for the following account of the rest of the Pigeons.

In old *Carrier* cocks the prize birds were all excellent Blacks. Old *Carrier* hens were a small class but first-rate in quality. The first-prize winner, a magnificent hen, well deserved the cup she took as the best *Carrier* in the Show; the second-prize one was fit to be first in many competitions. Young *Carriers* were very good, the first and second splendid birds, showing quality all over.

Short-faced *Tumblers* were a very fine class, first going to an Almond cock, grand in colour and head; second, also an Almond, good in head but not so rich in feather; third a good Yellow.

*Barbs* were not numerous but of good quality. First an exceedingly fine Black, which took the cup for the best Barb or Short-faced Tumbler. Second, third, and highly commended fair birds.

In *Fantails* all the prizes went to real Scotch birds with a good tail and a small body, characteristic of those birds. Being always in motion they completely put the large coarse English birds into the shade, the latter always standing in the pen like stuffed birds, devoid of nervous action. First, second, and third were all good birds of the real Dundee breed. Pen 545, the Crystal Palace winner, did not draw the Judges' attention, being out of condition, apparently from over-showing.

In *Jacobins* the first prize went to a Red hen, good in colour, hood, and chain, but yellow-eyed. As this class, however, was judged by gas-light the Judges cannot be held responsible for not noticing it; we prefer, on the whole, the second bird, as being rather longer in feather and better in head. Third, a Yellow, a fair bird. The class was large and on the whole good.

*Trumpeters* comprised a number of excellent birds, there being little to choose between the prize-winners, which were all of the new type.

English *Owls* were numerous and good. The first and second seemed to us, however, to have a strong cross of the Foreign; and as there is only one standard for both varieties, and fanciers will cross them, it seems useless to divide them. No. 591 (J. Chadwick), was the best of the lot, but came too late for judging. In Foreign *Owls* a splendid White, good in all points, was first; second a good Blue; third a White.

*Turbits* were a large class but contained nothing very striking. First a fair Yellow; second same colour, well frilled but deficient in peak.

Nuns were not numerous, but the first and second were very good.

*Dragoons* are birds we do not care much for in Scotland, and consequently cannot know much about, but according to our light the first-prize bird well deserved its place; there was little choice between the second and third prizetakers.

*Antwerps* were the smallest class in the Show, three entries; and next year we hope there will be no class for them, as they are quite out of place in a show pen.

In Common *Tumblers* a pair of nice Black Mottles were first, Whites second.

Any other variety was not a large class. First, Lace Fantails; second, Magpies; third, Archangels.

The Selling class contained no fewer than thirty-eight entries, and comprised some very good Pouters. The first prize, No. 665 (T. Rule), went to a perfect gem of a Jacobin, quickly claimed at £1 15s. Second a Mealy Pouter, and third a pair of grand-coloured Red Magpies.

## HONEY AND BEES AT SHOWS.

A snow—what is its nature, and what its effect? Is it an exhibition of ordinary or extraordinary things? Could the cattle, the poultry, the Pigeons, the Rabbits, the song birds, the fruits, the vegetables, and the flowers, &c., be produced and presented in such fine form and perfection at various shows, as is the custom, by ordinary means? I think not; and it is the fact that they are not, nor are they expected to be. Why, then, should a bee show have restrictions that are not applied to any other kind of shows? To sell sugar syrup for honey, or foreign honey as the pure nectar of English flowers, is right down dishonest, and deserves visiting with as severe punishment as any other fraud. Dishonesty of this kind, to some extent, carries its own corrective, for few will face the dog a second time which has bitten them; so, few will purchase a spurious article from the party who has cheated them once. But to ascertain and to exhibit what our little favourites can do under the most favourable circumstances and assisted by artificial treatment need cause no one pain. Have shows a demoralising tendency? I think not; for it is perfectly understood that every method that art can suggest is resorted to to accomplish the desired result. It would never do for the agricultural societies to establish a rule that stock for exhibition should be simply turned into a pasture field, the ordinary mode of producing beef, because they would find their exhibitions, like the honey supers mentioned by "A SOUTH LANCASHIRE BEE-KEEPER," at the Burton-on-Trent Show, not half what they ought to be; and if they did, some one would begin to squabble about the particular herbage of the field. So that I think for exhibitions there is nothing like a fair field and no favour, and the fewer restrictions the better, for you have only to say to human nature, "You must not," to awaken and stimulate the spirit of evasion. Of course, if there are to be restrictions, let them be properly defined and by all means honestly carried out; but I think the restrictions suggested by some of your valuable contributors would tend to give the prizes to situation, and not to the abilities and intelligence of the exhibitors.

I cannot think that any bee-keeper would leave the Manchester Exhibition with false impressions, for he would know that such supers could not have been obtained in 1873 without artificial treatment. I am afraid that more false impressions are made by parties recommending this and the other fine hive, and this and the other grand system for obtaining honey, whereas the description of hive is only a secondary matter, if it only is sufficiently large for breeding purposes and for storing honey. The main desiderata are good pasture, fine seasons, and strong colonies; for without these, no matter what system is pursued or what kind of hive is adopted, the result will be very poor indeed.

The nature of shows is extraordinary, and necessitates extraordinary treatment, and their effect is to stimulate the exhibitors to fresh exertions, and I hope we shall have many more of them.

—THOMAS BAGSHAW, *Longnor, near Buxton.*

## HONEY AND HONEY EXHIBITIONS.

I HAD hoped that the question of "What is honey?" would not again be discussed in "our Journal" till the simple experiments suggested by me would be tried by "B. & W." and others, who fancy that crude honey, or honey as it is found in flowers, becomes perfect by evaporation. I am quite certain that if the question be fairly and fully tested by experiment, my statements will be amply confirmed. In addition to the experiments suggested, I may mention another, which goes a long way to prove that honey as found in flowers undergoes a great change in the hive. Let bees returning from the fields with their bags well filled be caught and dissected, and let an equal number be fed from a honeycomb and dissected. The honey in the former will be found to be crude and imperfect—a mere sweet juice, lacking the smack and pungency of real honey. If any of our friends object to take the lives of bees with a view to settle so unim-

portant a question, let me ask them to catch the bees containing the honey (for examination) by the wings, and tickle or touch the under side of their abdomen with a straw or small twig, and they will thus cause the bees to deposit the contents of their bags on the straws or twigs. Let the bees be afterwards set at liberty, and the deposited honey examined and tasted.

Another valued correspondent—viz., "A RENFREWSHIRE BEE KEEPER," has appeared with a new theory as to how honey is consolidated in hives. He asks, "May it not be that our favourites at this particular stage possess the power, before hermetically sealing up, to suck out and extract the aqueous and aerial properties, causing it ever afterwards to consolidate and keep?" If we were disposed to examine and compare theories, and award prizes for best and second best on this subject, our Renfrewshire friend, so high in other matters, would not be at the top of the list. At the commencement of his letter he says, "Mr. Pettigrew is perfectly correct in treating, for all practical purposes, sealed honey as a distinct article from unsealed." I am very sorry he has misunderstood my meaning or unwittingly misrepresented it in this matter, for I have never treated honey sealed as different from honey unsealed, or made a distinction between them. Much that I say about bees is quoted from these pages and re-appears in country newspapers, and hence, while courting honest criticism, I am very anxious to be fairly represented by those who disagree with my opinions. I hold that honey proper is produced from the sweet juice found in flowers, and is converted from this sweet juice or crude honey into perfect honey by being re-swallowed and disgorged a second time by bees. Whether found in cells with or without lids it is perfect honey. I respectfully request those who think differently to put the matter to the test.

Now for a word about honey exhibitions. If rules could be framed to operate for the benefit of exhibitors and exhibitions I should be gratified. At all events, they could be tried. Mr. Yates and I wrote the schedule of prizes for bees and honey at the Manchester Show. Mr. Yates gave £5 of the £25 offered, the rest being collected by myself. We were anxious to make the Show a success as well as an example. The Curator lately told me that bees and honey would be a feature in all future autumn exhibitions at the Manchester Botanical Gardens. Why should not the Crystal Palace introduce "hives and honey" at its next September show? It would be a new and attractive element at their annual fête. Good prizes will secure great competition. In the case of the Crystal Palace, in which bees in glass houses may be seen always, it will not be necessary to offer prizes for bees and glass hives, but simply for supers and hives of honey. This suggestion is thrown out for others to take up and carry into execution.

Those who attempt to frame rules and limits for apiarists should remember two things—viz., the uncertainty of our seasons and the desirability of having something strikingly grand for visitors to look at. Who cares to see what is not uncommon? And who cares to exhibit what is not worth notice? Prizes are offered for things that command the admiration of visitors. A hard-and-fast line, forbidding artificial treatment in the case of bees, would probably cause every second exhibition of honey to be a complete failure. I speak now in the interests of societies offering prizes and of bee-keeping generally, for it is not my intention ever to compete for prizes, though I have used many incentives for others to do so. If we visit an agricultural exhibition we find the prodigious products of artificial treatment—cattle of immense weight and size, each of which when young consumed the milk of four cows. If artificial treatment is permitted amongst cattle, &c., it should be doubly so amongst bees which are dependant on sunshine. Apart from all considerations of prize-taking, I hold a few pounds of sugar given to a swarm lately hived to be in accordance with the management of all able apiarists, and of immense advantage to the swarm.—A. PETTIGREW.

## OUR LETTER BOX.

TREDEGAR POULTRY SHOW (W. L.).—We are surprised that you have received no answer respecting the money for the birds sold. Write again to the Secretary.

DEVIZES POULTRY SHOW (*Idem*).—The card in the first instance was probably misplaced. You can have no remedy under any circumstances.

POULTRY DIARY (H. E. R.).—We published one some years since, but it did not sell, and we know of none now. There is an American periodical so called.

HENS FOR BREEDING (*Glaucus*).—They are not good hens to breed from, being too mossy and indistinct in the markings; at the same time many worse are bred from, and much worse take prizes at some shows. When we say they are not good to breed from, we mean if you want perfect birds; but to produce good stock you may use them.

MARKET FOR TURKEYS (A. C.).—As a rule, Turkeys sell better at home—i.e., in the nearest market town, than in London. Much expense in the way of carriage and commission is saved. You should make 1s. per lb. of them all, and those weighing 20 lbs. should make more. If they will not make this price, you must have them fatted, killed, and picked clean, and sent to London. We repeat, as a rule they sell better at home.

BRAMA USELESS—HOUDANS (J. K. L.).—The Brahma is a failure, and you will do well to kill him. The description is anything but that of a stock bird.

Houdans are good hardy birds and non-sitters. Their eggs should be set in March.

**DORRINGS—CAOWING HENS (Spanish Cock).**—Your experience of the Dorking hen may and will be endorsed by thousands. There is no better breed for general purposes. A crowing hen is the gallinaceous representative of "woman's rights," and is a nuisance. She will never lay, and will torment those that do. Kill her.

**RATES OF LAYING (H. C.).**—No bird lays every day without intermission, nor can any average be arrived at. Much depends on health, weather, food, and season. Thirty-three eggs are quite a full average result in twelve days from four or five hens. The number will increase in a fortnight.

**TWISTED FLIGHT-FEATHERS—DUCK MANAGEMENT (L. A. B.).**—A twisted flight in a Goose is a disqualification, and to any other bird. Oats are the best food for Geese and Ducks. Ducks should begin to lay at between eight and nine months old. The best way to keep tame Wild Ducks tame is to pluck them, to cut-off not only the feathers, but the wing itself. If this is not done, and they are kept on a large piece of water, they are apt to be decoyed away by Wild Ducks in the water either flying over or settling on the water with them.

**JACOBIN PIGEONS (Idem).**—Jacobins should be small, and must be pearl-eyed. A pearl eye has a white iris. Do you mean there is no outlet for the Pigeons, but they are confined to 6-feet square? In that case, if you put-up plenty of boxes, you may keep six pairs.

**BRAHMA DYING (Tyro).**—From your description the bird died from disease of the liver, caused by great variation of temperature and insufficient feeding. Your food is good enough, but where you have to counteract unfavourable weather you must feed early and late. They should have meal at seven in the morning and at half-past four in the afternoon, with a feed of maize and house scraps at mid-day. Our experience of Brahmans and Cochins is, that they are worn-out at three years and a half old. We never use them after two.

**ROSEN DUCKS (Idem).**—Being only 5 or 6 lbs. in weight they are not heavy enough, but as they bear age better than the fowls you may look to their getting heavier as they get older. You may mate the drake you mention with the five-year-old Duck and two of the largest and best of your young ones.

**TWISTED BILL (Duckwing).**—There is no remedy, and you will do well to kill him.

**BLACK SILKIES (E. J. N. H.).**—We can hardly alter our previous opinion, but will continue to make every inquiry. We have never seen Black Silkies, but have no doubt they may be made, or may come through accident. The first Black Cochins were the result of a cross between a Buff cock and a White hen. In our own experience one particular walk produced two-thirds of Emu Cochins, although the parents were unmistakable Buffs, and carefully selected to breed good birds. We think the experiment worth trying, but you must be prepared for one result which seems to show itself already. In these accidental breeds, where black birds are the result, it is almost impossible to get perfectly black cocks. Coloured feathers will show themselves in the hackle and saddle, especially after the first moult.

**MIXING VARIETIES (A Subscriber).**—We are not favourable to a moderate run of poultry made-up of several breeds. A well-managed but limited run should consist of one breed only, and that breed should possess all the necessary properties for the perpetuation of its breed. Of those you have named we prefer the Brahmans. They bear confinement, they are very hardy, they are good layers and sitters, and the young are easily reared. Houdans and Creve-Coeurs are both hardy and good layers, especially the latter, but they do not sit. This involves buying broody hens when you wish to rear chickens. We do not think either of them possesses any advantage of any kind to compensate for this inconvenience. You might have saved the concrete floor to your house. As you have it we advise you to cover it 2 inches thick in gravel or road grit, or, failing those, with good dry earth; a floor that keeps the feet always on the stretch, and that admits of no scratch is not favourable for fowls. The run you name will answer for sixteen hens and two cocks. Pains-taking may keep more. Having a large kitchen garden you may give them lettuce, and barrowloads of weeds or rubbish that are dug-up, clearings of paths, stumps of esbages, &c.; but all these things must be thrown in a heap, and the fowls will scatter them, affording food and amusement. As soon as they have divested them of the edible parts the bare stumps should be raked-up and taken away. If no part of the run is laid-down in grass you should cut large sods, with plenty of earth to them, and throw them in; the fowls will eat the whole of it. Avoid all artificial heat; healthy well-fed fowls do not want it, nor does it help them. If anyone would help gratuitously every house we have we would not accept the offer. Bricklayers' rubbish is excellent for fowls, especially during the laying season, but broken earthenware is quite useless. Your laying is very good and above the average.

**FOWLS FOR LIMITED RUN (A. C.).**—We call yours a small space. You may run a cock and six or eight hens in it, and some of the previous answer may interest you. To be a pleasure and a profit, where there is a family you should have both eggs and chickens. The breeds you name are non-sitters, with the exception of the Brahmans. We can find no birds more profitable than they are. Let experience speak. They are of comparatively recent introduction, and yet they form one of the largest, and in some instances the largest, class at exhibitions. Their eggs are an average size, and if they are killed young they are good for the table. No bird is good for the table after it is old; and for eating purposes it is old at seven months old. The very dark eggs would be from Cochins or Brahmans. They lay all colours—from a light mahogany to a French white. If you decide against Brahmans, and choose among the non-sitters, those that will do best with you will be Spanish, Houdans, or Creve-Coeurs. Your house will do. Raise the floor of it above the run, let the bottom be of earth, and the door in one corner—not in the middle.

**POULTRY EXPERIENCE (\*).**—We are always glad to hear of your experiences. The plan you have adopted is the profitable one. Keep a few of your best hens two seasons, but let the remainder of your stock be pullets. Moulting becomes more difficult to a hen every succeeding year. The reparative process becomes slower and more difficult. They also lay fewer eggs. Send them to Stevens sale, the nearest market, or into the kitchen. The only code of a profitable poultry yard should be a Draconian one, or transportation should be a regular annual process.

**FOWLE'S LEG DISLOCATED (Sam).**—From your description the bird will never be a prize one again. A leg broken, when the fracture is visible, can be set and cured without much detriment, but if the injury be above the knee there is little hope. A bird hatched November, 1873, cannot be shown as a chicken of 1874 at any period of the latter year.

**COCKS FOR EXHIBITION (Glewyn).**—Put a pullet with each cock. It will save their losing much flesh and weight. The hens from which you intend to breed should now be running with cocks. Good cooling food is the best for moulting

fowls. Everything heating should be avoided. Mix their ground oats with milk. Give barley meal, and change with whole maize and barley. We have never found fowls do well on maize meal, and they would not eat it, unless they were starved to it. Lettuce is good food in moulting time.

**ALTERING COMBS (J. M.).**—We have never succeeded in getting pea-combs from single ones, either in Brahmans, Hamburgs, or Sebrights. Faults are more surely transmitted than virtues. We would not on any account breed from a vulture-hooked bird. (C. S.).—If the comb be a good pea-comb it is not a disqualification—it is a disadvantage. We should not hesitate to breed from him.

**ULCERS INTERNAL (New Subscriber).**—The disease you complain of is partly caused by great variations of temperature, and partly by insufficient or injudicious feeding. Avoid all but natural foods. Give ground oats, barley meal, a little whole barley and maize, with kitchen or house scraps, and you will have no disease. We have no faith in prepared food, or in substitutes for that which is sufficient for a wild bird.

**PERFORATED ZINC (C. H. E.).**—No. 12½ we should think the best size. Try it.

**BEE FLOWERS (J. A. H. S.).**—The Sunflower and Buddles gloiosa afford pasturage for bees, especially the Buddle. We do not remember a flower, except some of the Arums, to which bees will not resort.

**BOOKS (Cultor).**—It is the fourth Georgie of Virgil that details the Roman knowledge of bees and their management. There is a translation by R. M. Millington, published by Messrs. Longman, that would suit your purpose; for though in verse the translation is very close to the original Latin.

**MARINE AQUARIUM TUBING (Glaucus).**—Indiarubber tubing is the handiest, and not affected by or affecting the water. Throw the coffee grounds on to the dung-hill.

#### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.						Rain.
1874.	Baromet- er at 32° and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.			
Jan.		Dry.	Wet.			Max.	Min.	In sun.	On grass		
	Inches.	deg.	deg.	W.	deg.	deg.	deg.	deg.	In- door.		
We. 14	29.995	48.3	47.1	W.	40.3	51.4	51.7	58.5	29.7		
Tb. 15	29.914	48.4	46.8	S.W.	42.7	50.4	45.6	52.8	31.4		
Fri. 16	29.526	47.2	45.3	S.	43.2	53.8	44.7	57.8	43.0		
Sat. 17	29.537	35.4	34.9	N.W.	42.3	41.8	34.2	74.7	31.1		
Sun. 18	29.715	42.4	42.0	S.W.	40.5	51.8	29.8	51.6	26.0		
Mo. 19	29.704	46.7	45.4	W.	43.8	51.5	41.9	51.5	41.0		
Tu. 20	29.661	52.9	51.6	S.W.	49.6	55.4	44.2	73.3	43.6		
Means	29.7.2	45.9	44.9		42.3	50.4	38.9	62.5	36.8		

#### REMARKS.

- 14th.—Dark morning, and rather dull all day, though no rain.  
15th.—Dull all day, with frequent slight showers.  
16th.—Dull and showery all day, and wet night.  
17th.—Rather fine morning, gradually becoming more so; beautifully fine about noon, and particularly bright and pleasant all day.  
18th.—Frost in the night; rain at 8 A.M., and more or less wet all day, but very much warmer.  
19th.—Rainy and dark at 9 A.M., and occasionally so all day; about as unpleasant as it could be.  
20th.—Sunshine and showers all day, but the rain prevailing at night and with rather a high wind.

A week of higher temperature, but of dark, damp, comfortless weather, except on Friday, which was very bright and enjoyable. The maximum temperature in the shade on the 20th was higher than has occurred here in January since 1859. January 31st in that year had a maximum temperature of 56.3.—G. J. SYMONS.

#### COVENT GARDEN MARKET.—JANUARY 21.

THE markets generally are very slack and dull, the supplies being ample. Grapes and Pines are especially plentiful, the latter making very poor prices, owing to the inferior quality of the greater portion of the English-grown fruit now coming to market. Dealers are glad to clear out, even at less than 3s. per pound. A large bulk of Apples is still coming, but Pears of good varieties are comparatively scarce.

#### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	1	6	Oranges.....	1	0	1	0
Chestnuts.....	1	0	2	0	Quinces.....	1	0	0	0
Grapes, household.....	1	0	7	0	Pears, kitchen.....	1	0	2	0
Filberts.....	1	0	1	6	dessert.....	1	0	5	0
Cobs.....	1	0	1	6	Pine Apples.....	1	0	6	0
Lemons.....	1	0	12	0	Walnuts.....	1	0	16	0
Melons.....	1	0	5	0	ditto.....	1	0	2	6

#### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	1	0	4	0	Mushrooms.....	1	0	2	0
Asparagus.....	1	0	8	0	Mustard & Cress.....	1	0	2	0
French.....	25	0	0	0	Onions.....	1	0	3	0
Beans, Kidney.....	1	0	2	0	pickling.....	1	0	6	0
Beet, Red.....	1	0	8	0	Parsley per doz. bunches	4	0	6	0
Broccoli.....	1	0	1	6	Parsnips.....	1	0	9	0
Cabbage.....	1	0	1	6	Potatoes.....	1	0	6	0
Capsicums.....	1	0	6	0	Potatoes.....	1	0	6	0
Carrots.....	1	0	6	0	Kidney.....	1	0	0	0
Cantharifi.....	1	0	6	0	Round.....	1	0	0	0
Celery.....	1	0	2	0	Radishes.....	1	0	1	0
Coleworts.....	1	0	2	0	Rhubarb.....	1	0	2	0
Cucumbers.....	1	0	2	0	Salsify.....	1	0	6	0
pickling.....	1	0	0	0	Savoy.....	1	0	2	0
Endive.....	1	0	0	0	Scorzonera.....	1	0	2	0
Fennel.....	1	0	0	0	Seakale.....	1	0	2	0
Garlic.....	1	0	0	0	Shallots.....	1	0	3	0
Herbs.....	1	0	0	0	Spinach.....	1	0	3	0
Horseradish.....	1	0	4	0	Tomatoes.....	1	0	4	0
Leeks.....	1	0	3	0	Turnips.....	1	0	3	0
Lettuce.....	1	0	1	6	Vegetable Marrow.....	1	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	JAN. 29—FEB. 4, 1874.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m. h.	m. h.	m. h.	m. h.			
29	TH	Meeting of Royal Society, 8.30 P.M.	45.6	31.5	38.5	15	45 47	42 44	11 1	12 6	11	13 26	29
30	F	Length of day 8h. 59m.	44.7	32.2	38.5	22	44 7	43 4	12 2	6 7	12	13 35	30
31	S	Hilary Term ends.	44.9	30.9	37.9	20	42 7	45 4	23 3	46 7	13	13 44	31
1	SUN	SEPTUAGESIMA SUNDAY. [CANDLEMAS DAY.	44.4	33.9	38.2	14	41 7	47 4	37 4	15 8	0	13 52	32
2	M	Meeting of Entomological Society, 7 P.M.	44.6	31.5	38.0	21	39 7	49 4	51 5	36 8	15	14 0	33
3	TU	Meeting of Zoological Society, 8.30 P.M.	45.0	30.7	37.9	20	38 7	51 4	3 7	52 8	16	14 6	34
4	W	Anniversary Meeting of Society of Arts, 8 P.M.	45.0	32.8	38.9	20	36 7	52 4	14 8	4 9	17	14 12	35

From observations taken near London during forty-three years, the average day temperature of the week is 44.9°; and its night temperature 31.6°. The greatest heat was 57°, on the 29th, 1863, and 3rd, 1850; and the lowest cold 8°, on the 31st, 1857. The greatest fall of rain was 0.52 inch.

## HEATING—FUEL.—No. 3.



HAVING in a previous paper treated of the different kinds of fuel which may be employed for heating hothouses, I shall proceed in this to consider the extraction from the fuel of the utmost amount of its heat. To effect this we need a furnace, and wishing to convey the heat to the place where it is to be radiated, we need a boiler, and from it pipes to convey the heated water to the structure to be warmed, also pipes to

return the water to the boiler. We likewise require a flue to carry-off the smoke and other obnoxious products of combustion. Heating by flues or pipes—viz., by hot air, I do not propose to deal with; for though familiar with that mode of heating from disastrous experience, I have for some years let all my ideas run in the channel of heating by hot water, and to treat of hot air or fine heating would be to take a retrograde step, which is foreign to my intention.

Now upon the furnace and the boiler over and around it, and it may be under it, we centre the grounds upon which the economy, efficiency, and heating power of the fuel and boiler are to be determined. The furnace should be of such a kind as to insure the complete combustion of the fuel, and the boiler must impart to the water the utmost amount of heat to be obtained from the fuel. Our subject, therefore, divides itself into three parts—the furnace for the generation of heat, the boiler or agent to extract the heat resulting from the combustion of the fuel employed, and the circulating or heating medium.

I shall take these in reverse order, for the very obvious reason that gas, exceeding in heating power all other kinds of fuel, first claims attention, and from the great number of conservatories and greenhouses in and near our towns capable of being heated by gas it is, probably, of the greatest importance. I am sanguine enough to think that gas will entirely supersede the dirty, smoky, and extravagant use of coal for all household purposes for which the latter is now employed. Nothing has contributed more to our national prosperity than coal, but nothing has been used in so heedless and wasteful a manner. The waste of the heating power of coal is no doubt greatest in domestic consumption. Half, and more, of the heat afforded by coal is lost by the open fire-grate and chimney in our dwellings, and it is there for obvious reasons it should be most economised. Wealth is gained by labour of head and hand, and part, a considerable part, is spent in securing for its possessor the comforts and necessities of life—i.e., cooked provisions, dryness, and warmth. In manufacture the loss is not nearly so great, for the profits are calculated by the greatest manufacturing power from the least possible consumption or expenditure of material. To lose half the producing power of any substance would be to make in the profits of manufacture a proportionate reduction; but though he has a knowledge of this the manufacturer is as careless as everybody else about his

house fires. It is worth his attention to get as much out of coal as he can in the laboratory of wealth, but he cares so little for it at home as to allow half the heat of the coal to be driven up the chimney. Some hints will be given as to economising heat, not only in warming horticultural structures, but in dwellings as well, when I come to treat of boilers heated by coal.

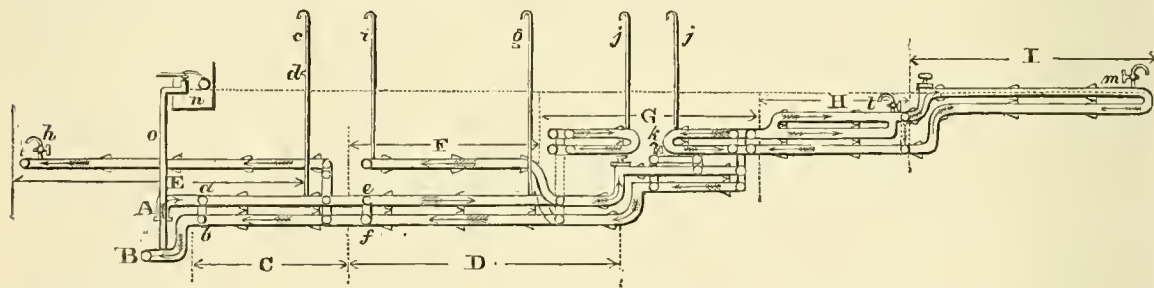
As regards the circulatory or heating medium, water in a boiler being acted upon by heat is dilated, it is made lighter, and the heated particles ascend, whilst the cold descend by reason of their greater specific gravity: hence circulation is produced, and the water in the descending pipe is heavier, because colder, than that which is in the boiler, and therefore displaces the warmer and lighter water. This circulation once established forces all the water in the apparatus to pass successively through the boiler by which it is primarily heated. The action and reaction given the water in the boiler proceeds until all the particles are uniformly heated, the water becoming stationary as the heat is exhausted. A properly-constructed apparatus with a fire at the lowest point keeps the water in continual motion; as the hot water passes out at the top of the boiler cold comes in at the bottom to supply its place. It is, therefore, necessary that all boilers should have a free passage for the heated water to flow out at, and an equally free passage for the cold water to enter at the lowest point. It is not only important that there should be a passage for the hot water out and the cold water into the boiler, but that the passage should be free throughout the pipes or circulatory medium, and that must not suffer disconnection, as would be the case were air to lodge and cause a stoppage of the circulation. There should not, therefore, be any air remaining in the apparatus after it is filled with water, otherwise there will be obstruction to a greater or less extent according to the amount of air. To let out the air, pipes must be inserted at the highest parts of the apparatus, for the air will become fixed if not liberated by an air pipe, and the circulation impeded. The air pipes must be taken up above the highest level of any of the circulatory pipes, and for the due expansion of the water from heating should not be less than 9 feet in length or perpendicular height above the highest point of the apparatus. If of less height the water is forced out of the mouths or ends of the pipes. A small metal three-quarter-inch gas pipe galvanised, or lead half-inch, strong or heavy, as the lighter descriptions soon wear out, answers very well, the end of the pipes being bent downwards to prevent anything getting in and closing them. These air pipes ought not to be taken outside or communicate by their ends with the external air, as I have known the water freeze in them; therefore for any good they are they might as well be dispensed with; but we must, nevertheless, have the air out of the pipes, and allow space sufficient above the other parts of the apparatus to hold the water on its expansion, and hence I do not advocate air pipes with taps, though there is no objection to them when the circulating medium is employed in heating different compartments on varied levels. These short air pipes with taps ought to be employed at

the highest point of the apparatus in every instance; those on any level but the highest, by which the air is to escape in filling the circulating medium, should be closed when the hot-water pipes are full. The taps may need to be opened occasionally to let out any accumulated air, but only so long as to allow of the space thus freed of air being filled with water. These pipes, with taps to let out the air, are objected to by most persons who construct apparatus for heating by hot water, but to what the objection is taken I cannot make out, as the heating in such cases is quite as satisfactory as when the air pipe is open. Note.—I am here alluding to heating houses on different levels. On the lower levels I say taps are good, or better than any number of feet of open-air pipe; but on the higher levels air pipes of some length are necessary, and it is well if the circulating medium is not quite filled with water, but so much so as to allow of the circulation of the water. This affords space for the expansion of the water as heated. Either we must allow space for the expansion of the water or have air pipes communicating with the external air, and such I have had frozen-up in severe weather, and completely useless.

The supply cistern will need to be fixed at such a level as not to fill the pipes on the highest level more than three parts full of water; or if so high as to fill them the air pipes must be taken up higher than the supply cistern, and their ends communicate with the external air (which, for reasons already given, I do not advise) to allow of the water passing out of them, as it will when the boiler is hard driven or the swell of the heated water greater than the pipes can contain. The pipe from the supply cistern should enter the boiler at its lowest point, or the return pipe by a syphon, which, whilst it will admit of the cold water from the supply cistern being drawn into the boiler, will prevent hot water flowing up it. But a better plan is to have a self-acting valve at the mouth of

the supply pipe in the supply cistern, which will be drawn up by the suction of the water when the boiler is feeding, and closed when the pressure of the water is from the boiler into the feeding cistern, and which occurs when the pipes are filled to the level of the water in the cistern and pipes alike, as it only is in this case when the water is not heated. Water will always find its level: when it is hot it will fill more space than when it is cold, and it must expand into the air pipes, and be driven out of them when boiling, so wasting water, or fill the supply cistern to overflowing, or space in the highest level of the pipes must be left to allow for the swelling of the water. No hot water ought to work up the supply pipe, and that it is prevented from doing by a self-acting valve as above described.

If the houses are on different levels it may happen that those on the lower level have to be heated whilst the higher ones are not heated, the latter being shut off. The air pipes and space left for the expansion of the water are of no use to the lower levels in this case, but the water will expand all the same. To meet this I would have an air pipe on the main from the boiler, which would allow for any expansion and boiling-out, and its end might terminate in a gutter or drop-spout, only I would have it not exposed to frost. With a pipe of this kind air pipes may be dispensed with, only we must have taps at the highest parts on all the levels, to allow of filling the pipes with water, and to let out any air that may accumulate. Water being driven out of the air pipes in houses in winter or at any time is a great nuisance and source of evil. I fear I have made this matter of air pipes, swell of the water, and boiling very complex, but I will endeavour to render my meaning clearer by a diagram; but I would just say that the supply cistern and pipe must be out of the reach of frost, and that it need not be larger than 18 inches long, 7½ inches wide, and 12 inches deep, and the supply to it should be regulated by a ball-cock.



In the above section it will be seen that the compartments heated are on six different levels. In describing them let us begin at A, the flow from the boiler, which, it need hardly be stated, is lower than any of the flow pipes. B is the return pipe to the boiler, entering it at its lowest part. The flow pipes throughout their length rise about half an inch in 12 feet, which is independent of the rise consequent on the levels; and the return pipes have the same fall to the boiler as the flow pipes have a rise from it, the return pipes being taken directly under the flow pipes. The direction of the water is intended to be shown by the arrows.

c Is a Mushroom house heated by a flow-and-return 4-inch pipe, a, b, on the same level as the main flow-and-return pipe, and having an air pipe c. This air pipe serves the whole of the apparatus as a swell and blow pipe now, but not when it was its original length; for when it was the same length as the other air pipes the water was thrown out first at one and then at another, causing quite a nuisance from the hot water dripping and the damp generated. To put an end to this, and have all the boiling or swell-out at one point, the air pipe was shortened to d—about 2 feet, and its end so contrived that the water would drip into a down or drop spout in connection with a drain. From that day to this, or about three years, there has not been any water thrown out of any of the pipes but this at d. Even when the heat is not wanted in the Mushroom house the water in the whole of the apparatus finds its level through the valve on the return pipe being left open, so as to allow of any swell being parted with through this air pipe. It answers, therefore, the purposes of air pipe for the Mushroom-house pipes, and as blow pipe as well for the whole apparatus.

d, Fernery heated by a flow e, and return 4-inch pipe f, on the same level as the main flow and return pipes, the pipes being one over the other, and with an air pipe at the highest point g.

e, Peach house heated by two rows of 4-inch pipes on the same level, but 2 feet above the main flow pipe, and rising to h where is a tap (at present a plug) to let out the air when filling the pipes, or any that may accumulate, it being occasionally opened for that purpose, and closed when water comes out. This, though having no air pipe always open, heats very quickly.

f, Peach house heated by three rows of 4-inch pipes on the same level as the other Peach house, or 2 feet above the main flow-and-return pipes, the pipes being all flows, there being an open air pipe i. The heating of this house is not so good as any of the others.

g, Stove heated by four rows of 4-inch pipes all round except the doorway, the four rows being 3 feet higher than the main flow-and-return pipes, and having air pipes at their highest points, j, j. There are also pipes for bottom heat to the centre bed, these pipes being 1 foot 6 inches above the main flow-and-return pipes, and having a short air pipe k coming through the bed, with tap on its end. The heating of this house is very good, especially the pipe beneath the bed, and with the closed air pipe.

h, Pit heated by two flow 4-inch pipes for top heat, and returns for bottom heat to the bed. The pipes are on a level 2 feet above the highest pipes of the stove, and their highest point is at l, where there is a tap to let out any air, which does not need to be done once in six months.

i, Pit heated by two 4-inch pipes one above the other, and

3 feet higher than the pipes in the pit last named. The flow pipe in this case is not more than half filled with water, it being the highest point of the apparatus, the water in this pipe when the apparatus is filled with cold water being level with that of the supply cistern *n*, as shown by the dotted line from *n* to *m*. This allows for the swell of the water; and though there is an air tap *m* at its highest point, and the highest point of the apparatus, which is left always open, there is no blowing-out of the water, as the swell and blow of the water is taken by the air pipe *c* shortened to *d*. Before the *c* air pipe was shortened the run-out at *m* of the water was constant when the apparatus was highly heated, and when closed the heating was very satisfactory, as it now is with the tap always open. This, I am convinced, it ought always to be, so as to allow of the water expanding and falling as the heating necessitates, and it should be from 1 to 2 feet higher than the blow-off of the water at *d*; or it would answer just as well to have the pipe full of water, and have taps in place of all the air pipes except *c*, which would require the taps to be opened occasionally to let out any air that will, if there be a high part of the apparatus, always find its way thither. Therefore it is best to have an air pipe at the highest part of the apparatus, and also one on all the levels, where, it being inconvenient to have air pipes, taps may be used, one of the air pipes having less length than the others, and it should be on those pipes which are in use whenever any part of the apparatus is in action. This is the case with the apparatus described, the heating of which is very satisfactory; the only thing to be wished for is an air pipe in place of the tap *m*.

The boiler is fed by the pipe *o*, 1 inch bore, which enters the return pipe *r* at a short distance from the boiler. On the end of this pipe in the supply cistern is a self-acting valve, the valve being drawn up when the boiler needs water, and closed when the pipes are filled to the same level as the water in the supply cistern. The supply of water to the cistern is regulated by a ball-cock.

The pipes in all the compartments are furnished with screw valves, they being on the return as well as the flow pipes, which prevents the water heating-up the return pipes, as is not an uncommon occurrence when there are only valves on the flow pipes. All pipes which leave the main flow-and-return pipes have valves, and directly those pipes leave it; so that there is no waste in heating pipes not required, the water, by the valves, being shut-off to a drop, which enables the boiler or furnace to be attended to for cleaning or repairs without having to empty the apparatus of the whole of the water. Thus the apparatus is sooner filled and sooner at work again than would otherwise be the case. The valves are 4-inch screw, and very satisfactory, which is more than can be said of many kinds, some being next to useless for shutting off the water.

The pipes used throughout are 4-inch, and the flow pipes one and all have a certain rise from the boiler, which is maintained through all the levels, the rise to the levels being direct, and the return pipes have a fall to the boiler corresponding to the rise in the flows, the pipes in no case being taken below the level which the return pipes have before dipping for passing to the boiler bottom. It is a fact in heating by hot water that when the heated water commences to fall it becomes cooled, and ought to pass at once to the boiler by the return pipe for the purpose of being again heated.—G. ABBEY.

### EUCHARIS AMAZONICA CULTURE.

THIS is one of the best flowering plants we can grow for all first-class purposes, either for the decoration of the dinner-table, the bouquet, or for ladies' hair. The treatment I give is as follows:—By the middle of February my plants will be out of bloom, then any that require it will be repotted; the soil composed of turfy loam and good leaf mould in equal parts, and one part rotten cow dung, with a little silver sand, and it will be better if a little charcoal be added. Mix these well together. Place a little of the coarsest of the soil on the crocks, then fill about half full. Select five good sound bulbs, placing four at equal distances round the edge of the pot and one in the centre, fill-up with soil, potting rather firmly. Give a gentle watering through a fine rose with tepid water, and place the pots in a light airy position in the stove. If the pots can be stood on bottom heat all the better. Let them remain there till May-day, then take them to a warm greenhouse, keeping them rather dry, and let them have the benefit of a good scorching sun. This is a very important point.

June 1st take them back again to the stove, gradually giving more water, and it will be very strange indeed if you do not soon see the bloom spikes coming up from amongst the bulbs. Once they are seen, this is the time to give liquid manure, but not before.

After blooming this time let the plants remain in the stove till the middle of August, then take them again to their country seat for about six weeks, giving them the benefit of all the sun they can have; after which they must be again taken to the stove and treated as before, and about Christmas you will have a good stock of blooms to cut from. This is all I can promise. I hear of some gardeners blooming them three times a-year, but I think it only occurs accidentally now and then—it may be a retarded bloom; but to bloom the same bulb three times a-year is more than I can promise, and I think is not practicable.

The important points are—1st, To mix the soil well together. 2ndly, Not to give too much pot-room, but to choose pots according to the size of the bulbs. Like all other plants, they bloom best when the pot becomes full of roots. 3rdly, Place a little moss over the crocks before putting in the soil, thereby keeping the drainage good. 4thly, After fresh potting be sparing of water until growth has commenced, or you may rot your bulbs. 5thly, Give them the full benefit of the sun as directed. 6thly, Do not give liquid manure until the bloom spikes appear, and do not put the plants in a corner after flowering.—JAMES R. POCOCK, *The Garden, Bromborough Hall, Cheshire.*

### THE ACHAN PEAR.

THE name of this very old favourite Pear appearing in THE JOURNAL OF HORTICULTURE (see page 52) awakened far distant memories, and I was pleased to think that your correspondent Mr. Taylor had found the Grey Gudewife, as I have heard it sometimes called, useful for culinary purposes, although hardly fit to take a place in the dessert. My experience with it, as well as with several other varieties of Scotch Pears, is exactly in accordance with that of your correspondent.

Having many years ago succeeded a Scotch gardener in a situation in one of the eastern counties of England, I was very much pleased to find that he had, a few years before he left the place, headed-down some inferior sorts of Pear trees, and had regrafted them with some of the best Scotch varieties, among which were the Grey Achan, the Muirfowl's Egg, the Green Pear of Yair, and several others, the names of which I cannot now recollect; but all of which I had known, and considered as of first-rate quality when in Scotland. So, as may be supposed, the trees had every necessary attention paid to them, and in due time they all came into bearing; but the fruit of all the sorts, with the single exception of the Green Pear of Yair, proved utterly worthless, and after several years' trial they were ultimately in their turn headed-down and regrafted with other sorts; so that I had come to the conclusion that it was vain to attempt the culture of those esteemed Scotch Pears in the eastern counties of England. But at the same time I thought it quite possible that a different result might be secured with them in the more mild and moist climate of the west. Perhaps some one of your many correspondents may be kind enough to inform your readers if they have ever known them to be successfully cultivated in any locality south of the Tweed; and it would also be interesting if some of your north-country correspondents, whose recollection may extend back some thirty or forty years, were to kindly inform us as to whether or not the fruit produced by these varieties of the Pear tree are as good now as they were then, and if they still continue to hold their own as regards quality with recent introductions. A recent writer would, it appears, have us to believe that the climate of auld Scotland is undergoing a gradual change for the worse, judging by the result of its effects upon vegetation; but whether meteorologists will be willing to entertain this hypothesis or otherwise remains as yet to be proved. And in the meantime it would be very interesting to know if this supposed deterioration of climate has had any palpable effect upon the quality, &c., of the hardy fruits of the country. I have always had an idea that the Cherry, the Gooseberry, and other bush fruit attained a degree of excellence in Scotland which they seldom acquired in the more southern parts of the island, and I am curious to know if this is still considered to be the case. I mention the Green Pear of Yair as being an exception to the worthless character of the Scotch Pears when grown in the eastern counties of England, and

this hardy variety is really worthy of a place in any collection, being a certain bearer; indeed I have never known an instance of its failing to produce a heavy crop, and the quality of the fruit is not to be by any means despised, but unfortunately it does not keep long.

If you will allow me to skip from Pears to Grapes, I will only beg to say to your correspondent Mr. Inglis that I think there is only one variety of the Mrs. Pince's Black Muscat Grape in cultivation; but this appears to be a variety which varies very considerably in appearance, as well as in quality, under the influence of varying circumstances, and I have seen Vines of this variety produce fruit so distinct from that of other Vines of the same sort, that had I not struck them all from eyes taken from one and the same plant—our only one at the time—I could hardly have believed them to have been the same. We, however, consider this variety here as the best of all late-keeping Grapes. It is grown in the same house with Lady Downe's, and both sorts have this season, as well as during others, ripened and coloured their fruit equally well, and that with little or no assistance from artificial heat.—P. GRIEVE.

### SPOILING SOIL.

Nobody knows what a quantity of good soil is annually spoilt through an idea that it is not fit for use without preparation and admixture. The old stereotyped advice is, Procure turfy loam from an upland pasture, stack it up for twelve months, and then chop-down and mix with so much sand, leaf mould, peat, lime rubbish, &c. Now, one ought always to bear in mind that a soil naturally suited to the growth of a plant will last in good condition longer, and will grow that plant better, than any compound possibly can do; perhaps not so grossly at first as a stimulating mixture would do, but the quality of growth will be better, and the plant will be hardier and longer-lived.

If a good natural soil cannot be obtained, the next best thing is one of the very simplest mixtures; three ingredients will always be better than four, and generally two will be sufficient. Then why stack-up for twelve months and spoil all you have been so particular about obtaining—fibre in the turf? Decomposition of vegetable matter produces most of the food of plants; when there is no longer anything in the soil to be decomposed the plant will cease to grow. The greater part of the fibre in turf decomposes during the first twelve months, and the plants afterwards grown in it get very little benefit from past decomposition. New loam is quite doubly as strong as that which has been stacked-up twelve months, and most quick-growing plants will do much better in it, especially if the space for the roots is limited. There are, however, some plants which thrive in loamy soil that are not gross feeders, and for these unadulterated new loam might be too strong. Partial decay or mixing with a quantity of the ingredients generally used will alter all this. Such substances as mortar, sand, coal ashes, broken bricks, &c., act principally, if not altogether, mechanically, and it is only in very rare cases that the soil would not be better without them, for if they do not actually impoverish it, which I believe they do, they take up the space that good soil would occupy more profitably. If the soil is too heavy or of too close a nature, why not use something with it that will act beneficially in other ways as well as mechanically—charcoal or charred earth, for instance? Many people have an idea that plants will not do well without a great quantity of sand. Nothing can be further from the fact. I have not used half a bushel of sand to mix with loamy soil within the last six years. I find plants grow much more strongly without it. If they do take up silica there is generally a hundred times more than they want in any new soil. Again, people are constantly putting mortar in their Vine borders, because Vines are said to like lime. Perhaps they do, but I prefer giving it to them in the shape of broken bones.

Another common way of spoiling good soil is by mulching. Mulch with half-decayed manure round trees newly planted, is the regular advice. Why mulch? Is it to keep out the frost? If so, use something that is not half decayed, and as dry as possible. Is it to stimulate the plants? Plants with broken and bruised roots commence growing quicker in a soil that does not contain fresh manure. Examine a heavy soil in the spring that has been mulched through the winter, you will find it a stinking slimy mass which it will take months to sweeten. I have nothing to say against mulching trees that are planted late in spring to prevent the roots drying too fast. Generally speaking, for hardy trees, keeping the surface soil

loose about them will be better than covering.—WILLIAM TAYLOR, Longleat.

### HERBACEOUS LOBELIAS.

THE old herbaceous Lobelias, so distinct from everything else, so quaint in appearance, are much neglected. I have for years taken great interest in these neglected old flowers, commonly called the Cardinal Flower, and I purpose giving you my notes and a few hints on their growth, hybridising, propagation, &c.

The oldest of all, Fulgens and Cardinalis, are fine indeed, especially in colour; but now I am happy to say there are many improvements. For a scarlet, one of the best is *Blazer*, a strong dwarf grower, and the flower intense scarlet; the foliage is ample, light green, covered with hair. The finest individual flower, and the most perfect, however, is *St. Clair*. The shape of the bloom is almost perfect, and the foliage reddish green and covered with hair. It is a tall and graceful grower.

*Dazzle* is another splendid variety. The spikes of bloom are from 3 to 4 feet long, and the intense vermilion of the flowers is very fine; the effect in a bed or border is grand. The foliage of this variety is very handsome, being rich purple blood colour. *Comet* is a very fine variety, a tall grower, with a brilliant vermilion flower. These beautiful plants when carefully looked after are not equalled by any other flower of the garden; their graceful spikes, 3 or 4 feet long, with their fiery snake-like tongues, are unique.

The scarlets are my favourites, but now we have white, purple, rose colour, blue, and other shades, and of these I will describe a few of the best.

*Alba grandiflora* is the best white, but it is a bad grower. I would not recommend it for beds.

*Leo Lespes* is a splendid and distinct variety, rosy pink, large flower, and fine spike. The plant is a strong grower. It is a first-rate sort for pots or border.

*Progress*.—Rosy magenta, large pips, and fine spike. A dwarf grower. Extra fine in pots; good in beds and borders.

*Roi des Bleus*.—Bright blue. Dwarf grower. Useful for pots.

*Purpurea Regia*.—Fine pure purple flower. A profuse bloomer, growing and branching, making a pyramid. Fine for borders or pots.

*Ringleader*.—Light rosy purple, fine. Free grower. Very strong.

*Syphilitica*.—Fine, large, ample foliage. Flowers pale blue.

I have enumerated only the finest sorts for pots or beds, either for the conservatory or garden decoration. They are old friends, and only want to be seen and known to be loved by those who can appreciate the beautiful.

The soil in which they thrive best is sandy loam with plenty of very rotten manure and water. A damp situation is particularly suitable for them. They make splendid plants 4 and 5 feet in height in large pots, and their brilliant blooms render them very effective for decoration. They should be potted in 8 or 10-inch pots in sandy loam with plenty of rotten manure. Let the drainage be carefully attended to. Charcoal in the large pots to the depth of 3 inches is not too much.

Lobelias will withstand a mild winter out of doors, but the best way to treat them is when out of bloom to cut them down to within 6 inches of the ground; they will die down nearly to the root, and then send up small shoots, which can be potted-on for another year. They also grow very well, if layered in leaf mould and sand, by cutting the bottom of the plant partly through and layering it in the ground, first plunging the pot. Give a small cut at every eye under the stem, and peg it down to the soil with hair pins. Put a slight sprinkling of soil over the top. They will likewise strike from cuttings in the spring.

Lobelias are very interesting to hybridise. Last year I took a plant of *Leo Lespes*, and impregnated every flower individually with another sort of a different colour. The result is that I have now upwards of a thousand plants with flowers of all colours, from which I have selected some splendid varieties.—EDWARD SHENTON, Hale Farm Nursery, Tottenham.

IMPROVED ROUND-LEAVED BATAVIAN ENDIVE.—“A” has certainly not had the right sort for Improved Round-leaved Batavian Endive, as it is totally different in habit from Fraser's Improved Broad-leaved, and more nearly resembling the old Batavian, but having a darker green colour and a much larger heart than that variety. It is also hardier, and altogether a real

improvement. I do not consider Fraser's any improvement on the old sort.—WILLIAM TAYLOR, *Longleat*.

### GRAPES THROUGHOUT THE YEAR.

I SEND you a few berries of Mrs. Pince and Lady Downe's Grapes. They were cut from the Vines on the 13th of this month, from a house that I began cutting from in the middle of last July. The sort I had ripe first was Royal Muscadine. I had between three and four hundred bunches in all, and they have been generally very good. I think six months is a good long season to cut from one house, but I have an opinion that I could have cut until the seventh month without doing much damage to the Vines; but I will not hold that it would be any advantage to them to let a few bunches hang until you started the house, then cut them. I started the house last year in the middle of February, but did not cut off the wood, or it would be a bad thing in the way of bleeding, but rubbed-off the eyes as they broke, and cut the wood off at a later season, when the Grapes began to colour.

A good judge told me a few days ago he thought these Grapes would keep nearly two months longer in a good Grape-room in bottles or in a Beetroot—that would be making eight months; and a nice little house for early forcing would soon complete having Grapes eleven months out of the twelve, as I think to have new Grapes by May, and that would be good work. I have found many faults with this vine. It was planned and planted before I knew it. I should be pleased to describe its construction to you if you think it worth while.—THOMAS MAYES, *Gardener, Crowcombe Park*.

[The Grapes arrived in perfectly good condition, and from the greenness of the stalks would, as suggested, have kept two months longer; they were superior specimens in every respect. We shall be obliged by the description you offer, and by details of management.—Eds.]

### ROYAL HORTICULTURAL SOCIETY.

WE have been requested to publish the following letter:—

"Royal Horticultural Society, South Kensington, S.W.,  
"January 21, 1874.

"SIR,—I shall be much obliged if you will allow me to refer in your columns to a circular which has been sent to Fellows announcing the formation of a Vote-by-proxy Association.

"The Council do not suppose that a paper so intemperate will in any way commend itself to the Fellows, and they certainly do not propose to put the Society to the expense and annoyance of issuing a counter circular; but they think it desirable to point out by this means, with your indulgence, that the principal allegations in the circular, signed by Lord Alfred Churchill, Mr. Bateman, &c.—viz., 1, 'That the Council did not summon the meeting of the 8th inst. within the period directed by the bye-laws'; 2, 'That they have set the Fellows at defiance'; 3, 'That the Council represents only such Fellows as desire to keep the Kensington Gardens as a pleasure garden, at the expense of the interests of horticulture'—are absolutely untrue.

"The Council are amazed that such unscrupulous statements should have been made, and also at the questionable ingenuity by which the names of Fellows who are said to have expressed opinions in favour of proxy-voting are attached to the circular embodying these statements.—I have the honour to be, sir, your obedient servant,  
"W. A. LINDSAY, *Secretary*."

### THE SEASON.

THE mildness of the weather is bringing on the spring flowers early. At our two gardens on Weybridge Heath there are now in bloom—

Cyclamen Atkinsii	Primula denticulata
cornu	Lithospermum prostratum
cornu album	Erica carnea
vernum	codonoides
ibericum	Daisies
Iberis gibbularica	Yellow Crocus
Arabia procurrens	Erantia hyemalis
Anubria deltoidea	Helleborus niger
Hepatica angulosa	Colchicum autumnale fl.-pl.
single mauve	Jasminum nudiflorum
single pink	Lonicera fragrantissima
single blue	Violet Czar
Primrose	Russian

—GEORGE F. WILSON, *Heatherbank, Weybridge Heath*.

CHYMOCOCOA EMPETROIDES.—It is a most lovely little bush, in my opinion, and the fruit, which is scarlet orange in hue,

is rather pleasant to the taste. I never saw it growing anywhere at the Cape, excepting on the seashore, amidst the most arid sands, where it seemed to thrive and flourish amazingly. I have often eaten the berries, which are, as you say, about the size of a pea.—G. B.

### MY WINTER GARDEN.

I PREFER to any glass roof that Sir Joseph Paxton ever planned that dome above my head, some three miles high, of soft dappled-grey and yellow cloud, through the vast latticework whereof the blue sky peeps, and sheds down tender gleams on yellow hogs, and softly-rounded Heather knolls, and pale chalk ranges gleaming far away. But, above all, I glory in my evergreens. What winter garden can compare for them with mine? True, I have but four kinds—Scotch Fir, Holly, Furze, and the Heath; and, by way of relief to them, only brows of brown Fern, sheets of yellow bog grass, and here and there a leafless Birch, whose purple tresses are even more lovely to my eye than those fragrant green ones which she puts on in the spring. Well, in painting as in music, what effects are more grand than those produced by the scientific combination, in endless new variety, of a few simple elements? Enough for me is the one purple Birch; the bright Hollies round its stem sparkling with scarlet beads; the Furze patch, rich with its lacework of interwoven light and shade, tipped here and there with a golden bud; the deep soft Heather carpet, which invites you to lie down and dream for hours; and, behind all, the wall of red Fir stems, and the dark Fir roof, with its jagged edges a mile long, against the soft grey sky. An ugly, straight-edged, monotonous Fir plantation! Well, I like it, outside and inside. I need no saw-edge of mountain peaks to stir up my imagination with the sense of the sublime while I can watch the saw-edges of those Fir peaks against the red sunset. They are my Alps—little ones it may be; but after all, as I asked before, what is size? A phantom of our brain—an optical delusion. Grandeur, if you will consider wisely, consists in form, not in size; and to the eye of the philosopher, the curve drawn on a paper 2 inches long is just as magnificent, just as symbolic of Divine mysteries and melodies, as when embodied in the span of some cathedral roof. Have you eyes to see? Then lie down on the grass, and look near enough to see something more of what is to be seen, and you will find tropic jungles in every square foot of turf, mountain cliffs and *défilés* at the mouth of every rabbit-burrow, dark strids, tremendous cataracts, "deep glooms and sudden glories" in every foot-broad rill which wanders through the turf. All is there for you to see if you will but rid yourself of "that idol of space;" and Nature—as everyone will tell you who has seen an insect dissected under the microscope—is grand and graceful in her smallest as in her largest forms.

The March breeze is chilly, but I can be always warm if I like in my winter garden. I turn my horse's head to the red wall of Fir stems, and leap over the Furze-grown bank into my cathedral, wherein, if there be no saints, there are likewise no priesthood and no idols; but endless vistas of smooth red green-veined shafts, holding up the warm dark roof, lessening away into endless gloom, paved with rich brown Fir needle—a carpet at which Nature has been at work for forty years. Red shafts, green roof, and here and there a pane of blue sky—neither Owen Jones nor Willement can improve upon that ecclesiastical ornamentation—while for incense I have the fresh healthy turpentine fragrance. There is not a breath of air within; but the breeze sighs over the roof above in a soft whisper. I shut my eyes and listen. Surely that is the murmur of the summer sea upon the summer sands in Devon far away. I hear the innumerable wavelets spend themselves gently upon the shore, and die away to rise again. And with the innumerable wavesights come innumerable memories and faces which I shall never see again upon this earth. I will not tell even you of that, old friend. It has two notes—two keys rather—that Æolian harp of Fir needles above my head; according as the wind is east or west, the needles dry or wet. This easterly key of to-day is shriller, more cheerful, warmer in sound, though the day itself be colder; but grander still, as well as softer, is the sad sighing key in which the south-west wind roars on rain-laden, over the forest, and calls me forth—being a minute philosopher—to catch trout in the nearest chalk stream. The breeze is gone awhile, and I am in perfect silence—a silence which may be heard. Not a sound, and not a moving object—absolutely none. The absence of animal life is solemn—startling. The ringdove, who was cooing half a

mile away, has hushed his moan; that flock of long-tailed titmice, which were swinging and pecking about the Fir cones a few minutes since, are gone; and now there is not even a gnat to quiver in the slant sunrays. Did a spider run over these dead leaves? I almost fancy I could hear his foot-fall. The creaking of the saddle, the soft step of the mare upon the Fir needle, jar my ears. I seem alone in a dead world. A dead world, and yet so full of life, if I had eyes to see! Above my head every Fir needle is breathing—breathing for ever; currents unnumbered circulate in every bough, quickened by some undiscovered miracle; around me every Fir stem is distilling strange juices, which no laboratory of man can make; and where my dull eyes see only death, the eye of God sees boundless life and motion, health and use.—(*"Prose Idylls,"* by Charles Kingsley.)

### A TABLE FOUNTAIN.

A TABLE fountain, simple in construction and action, and admitting of any desirable degree of ornamentation, has been

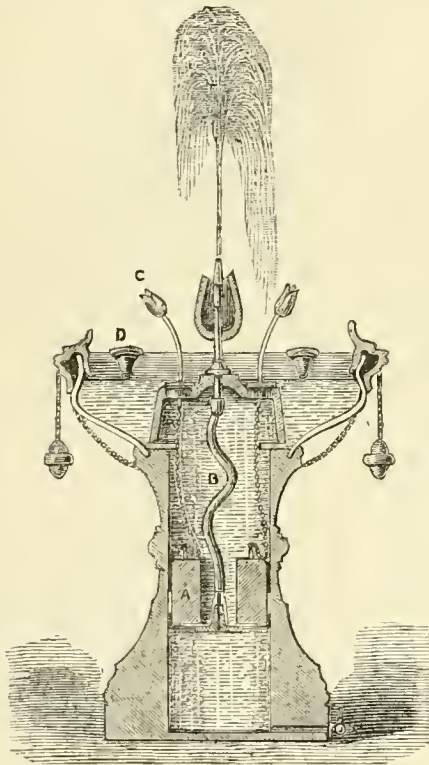


Table Fountain.

recently patented in the United States. The sectional figure annexed will render a description of it clear. It consists of a pedestal, which may be of cast metal, porcelain, or wood, turned and ornamented in the lathe, while the basin may be of glass, metal, or other suitable material, with metal rim adorned, as in the specimen illustrated, with lions' heads, supporting chains, &c., while small cups n are attached to the inside as receptacles for flowers, Ferns, &c. Just beneath the jet, too, is a tulip-shaped receptacle for flowers; and the handles of the plugs c may be ornamented in shape as shown, or else be concealed beneath the water. In the cylindrical hollow of the pedestal a heavy plunger a fits water-tight; through the centre of the latter the rubber tube b passes, ending in a flap-valve pierced with a small hole, of sufficient size, however, to supply the jet with the requisite quantity of water. The hollow of the pedestal is separated from the basin by a perforated cap supporting the jet and containing the two plugs, which are connected to the plunger by chains or cords. To set the fountain at work all that is necessary is to fill the basin with water, which will also run into the hollow pedestal, till the desired height is reached. The plunger is then pulled-up by means of the plugs or the handles c, the water passing

through the hole in its centre, and beneath through the flap-valve; on restoring the plugs to their position the plunger descends, and the water is forced through the pipes to the jet, where it rises to a height varying with the size of the jet and the weight of the plunger. It is obvious also that the fountain will play for a longer or a shorter time according to its size; but it is so easily started again that its action may be considered as virtually continuous. The water, of course, may be coloured or perfumed, though such a proceeding might not be relished by gold-fish, which would otherwise live tolerably healthily in the glass basin of such a fountain. A tap should be fitted at the bottom of the pedestal for drawing-off the water when desired.—(*English Mechanic.*)

### MRS. PINCE'S BLACK MUSCAT GRAPE.

I WAS about to write a few observations on this Grape when the Journal came to hand, bringing Mr. Inglis's queries and interesting notes. It is the first dawn of there being two varieties. I will, however, speak of one, and what I may term its caprice. The Vine came from Exeter direct and is true. It was planted in a new viney with Alicante, Muscats, and Lady Downe's. In due time they arrived at a fruiting state, and produced fine bunches. The first year of fruiting the house was not heated—that is, only sufficiently to exclude frost from bedding plants in winter. The Vines started naturally, and were carried-on with little more than sun heat. The Muscats and Lady Downe's did not ripen even moderately well, Alicante was better, and Mrs. Pince the best of all—that is, really very good both as to colour, flavour, and keeping. That is under what I call no heat.

Next, the house was heated by hot water, and a higher but not really high temperature sustained—high enough to ripen Muscats, Alicante, and Lady Downe's, which were and are good to look at, to eat, and to hang, but Mrs. Pince fails in all these requisites. In a word, it is not ripe. Is not that strange? I must confess myself puzzled not a little by it, and can only suggest one explanation which I shall come at in a moment. In 1872 a Vine of Mrs. Pince in a house of Hamburgs receiving no artificial heat produced really nice Grapes, well-coloured and good, but not perfectly ripe for long keeping. In 1873 the Grapes of this Vine were neither well coloured nor good to eat. How is this? The first suggestion is, the summer of 1873 must have been colder than that of the year previous; but it is not so, as I find on reference to temperatures carefully taken on the spot, that the total means (day and night), for the months from March to October, both inclusive (the growing months), was, in 1872, 53°, and in 1873, 53½°. I was struck to find them so nearly alike. The point, however, is in favour of the year in which the Grapes did not ripen; the year in which they did being slightly the colder, much the duller, and infinitely the wetter.

I am not for a moment disposed to think that these unpropitious conditions are in favour of the Grape, but rather that it was not a question of temperature at all. The finest Grapes I ever saw of Mrs. Pince were grown in warm Black Hamburg (not Muscat) temperature. They were in all points perfect. The following year, under the same temperature, they were by no means so good. They are in an outside border, and it might be surmised that the deluge of 1872 might have caused injury to the roots; but against this idea is the fact of the Vine first noticed—the one amongst Muscats—which is planted inside. The differences here noted are not, therefore, due to temperature or root-watering variations, and I am driven for a solution to the foliage.

I will now state a belief, and I invite correction, that Mrs. Pince requires to carry more foliage than any other variety to thoroughly perfect the fruit. Wherever I have seen it first-rate there has been foliage in abundance—a great proportion of leaves to bunches. In the variations in question there were in the successes a few bunches and a long growing rod above the fruit; in the failures, more bunches and a much shorter rod of growth-extension. That was necessarily so. But what about the side growth? Well, I believe it was simply too much restricted, and herein was a great if not the whole source of the failures. If, say, Hamburgs will perfect themselves when stopped at two leaves from the bunch, I say give Mrs. Pince four, five, six, if there is room for such to expand without crowding. Look at the surface of the leaf of Mrs. Pince and one of Black Hamburg. Lay one on the other and measure the difference in breathing, elaborating power, and see the loss in superficial inches which must be debited to Mrs. Pince.

Is there nothing in that? I think there is, and it tells us to leave two leaves on this variety when we would leave only one on most others. So far as my observations extend, practice sustains the theory of the matter.

There is no doubt that this is a grand Grape when well grown, and everything throwing light on its peculiarities or nature is demanded to add to its virtues the one that is lacking—viz., certainty of perfection. My contribution is, Let it carry plenty of foliage; do not restrict violently; follow no rule rigidly; but let it go as far as possible, providing only—and this particularly—against overcrowding. This given, I think there will be little to fight for in the matter of a few degrees of heat more or less, and on this point I will not enter the lists at all, not being able to speak practically and with that accuracy necessary to approach this element of its culture.—J. WRIGHT.

### SOIL CULTURE.

It will never hurt an intelligent man to know why he does things. Rather will he profit in this, that he can better adapt himself to circumstances. There are in horticulture hosts of practices—all good practices—about which none of us know the reasons, or if we reason at all, reason wrongly; and hence we often do work which might as well be undone for all the good it is to us.

There are innumerable things in greenhouse-building and greenhouse-warming, in plant-growing and fruit-culture, the labour on which is absolutely thrown away, simply by doing what others have done, without knowing why they did it; and yet the practices may have been very good in themselves at the time and for the purpose, whatever it may have been, but of no avail to the purposes of the modern imitators.

It is not long since the writer was talking with one of the leading scientists of Europe, and wishing to learn the present condition of physiological science, introduced the topic of root-growth. It was contended by our really learned friend that roots could only grow well when in very loose soil, which soil must be very loose in order to "admit air to the roots;" for, "without a free communication of the roots with the atmospheric gases, rapid growth was impossible." He was at once referred to Grape Vines, which, for mere experiment, had been set in what might be termed a *turnpike* road. It was, in fact, the side of a road which had been heavily stoned, and over which horses and heavy carts have been running for twenty years. The "turnpike" had to be torn open with a pick to admit the Grape Vine roots, and the material picked out, filled-in again after the roots were set in. Yet these Vines make an annual growth of 20 feet, and bear fruit of the very best description. The grower top-dresses with rich manure, prunes "according to the art," and so forth. The plants have the best professional treatment, but "loose soil to admit the air" they have not. Our friend looked at the illustration, shook his head, and passed on. It is a question whether the circumstance will ever be called up again to his mind. He will yet teach that plants "must have loose soil" as strenuously as ever. He will no doubt think that one or two instances are exceptions; and yet on "one or two facts," or experiments, as they are generally called, by not merely "one or two," but often by one original observer, most of the current literature called vegetable physiology is founded. If "one or two" plants can grow magnificently in hard solid soil, but with an abundance of good fertilising matter, without being "loose to admit the air," why may not a thousand?

But these "one or two" facts are not the only ones. The writer is in favour of ploughing and digging our soil very much as before. There are many reasons why we must do so; but if we ever believed that the mere loosening of the soil was to be one of these reasons, it is clear, from these facts, we should be worse than an idiot to continue on in that belief. We shall have to dig and plough and cultivate for many reasons; we often do so now because we think the roots require this; but where there is no other reason than this, we may save ourselves this much labour and expense. With abundant plant food they will take care of themselves.

We mentioned these circumstances to Mr. Vickroy, who has charge of the experiments at the Industrial University. He sustained "one or two" facts by his own experience with corn. For four years corn had been planted in two lots side by side. In one the ground was manured and "worked" in the usual manner for corn, in the other it was manured in the same way without any working. There was no difference whatever in the crops produced from either lot.

Now, because these facts are true, we do not propose to step all digging or ploughing-up of the soil—we propose to go on as usual.—(*American Gardener's Monthly*).

### FLOWERS FOR OUR BORDERS.—No. 25.

SCUTELLARIA MACRANTHA.—LARGE-FLOWERED SKULL-CAP.

Though less showy, perhaps, than some other of the Lipworts, many of the Skull-caps are very ornamental plants, and none more so than the *Scutellaria macrantha*.

It is a native of Eastern Asia, and appears to be widely spread, extending, according to Sir William Hooker, to the great wall of China, where it was detected by Sir George Staunton. As might have been anticipated, it is perfectly hardy and of easy cultivation and increase. It is an herbaceous perennial, scarcely exceeding 1 foot in height, with angular,



*Scutellaria macrantha*.

branching stems, and opposite, entire, lance-shaped leaves, and forming when sufficiently strong a spreading bushy tuft. The very handsome purple flowers are produced in long terminal spikes, and are larger than those of any other species known to us. The plant seeds freely, and may be readily increased by these means, as well as by division of the roots, or by cuttings under a glass, either in the border or frame. Seedlings usually flower the first season if sown early, and should be transplanted from the seed pan while young, as they will suffer less from removal than at a more advanced state of their growth, when their tap-like root is more developed.

With regard to soil, a mixture of good loam and decayed leaves or manure appears to best suit this plant, though it will probably flourish in any good garden soil; for many hardy plants, like individuals, possess the happy faculty of adapting themselves to situations of diverse character, provided that they are not of too extreme a nature.

It disappears so entirely during the winter months that it is advisable to mark its place in the border by a label of some description, for much injury is often done to plants of a similar character when the borders are dressed in spring, from ignorance of the precise locality of their roots.

When first introduced this plant was recommended by Sir W. J. Hooker as a desirable one for planting in masses, and now that its seeds are readily procurable at a reasonable rate, its employment for this purpose may be fairly made the sub-

ject of experiment, as its flowering season is of considerable duration. The effect would probably be enhanced by planting it in association with the yellow-flowered *S. orientalis*, a plant of similar habit and height. It must, however, be conceded that neither of these plants can vie in brilliancy with the plants usually employed in bedding, and their proper place is, perhaps, the front row of the mixed border.—(W. Thompson's *English Flower Garden*, Revised by the Author.)

## A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 18.

### CALANTHE.

In this genus we have two sets of plants, each widely different in habit of growth. The species and varieties here included are all winter-flowering plants, and yield a profusion of lovely flowers, alike useful for button-hole bouquets or the embellishment of a lady's hair. Unfortunately they lose their leaves about the time the scapes appear, and therefore are despised by many; but if a few Ferns are grouped amongst them the want of their own leaves is never felt, indeed some of the more coriaceous-leaved Ferns may be planted in the pots with them, and then it matters nothing. The compost the plants enjoy is a mixture of peat, light loam, good leaf mould, and dry cow manure in equal parts; and observe when potting not to elevate them upon a cone of soil, but pot like an ordinary stove or greenhouse plant, a little below the rim. During the growing season they enjoy an abundant supply of water, but after growth is complete it must be administered more sparingly, and therefore for this reason I have recommended the selection of coriaceous-leaved Ferns for planting with them, because they can better withstand a little deprivation of water. At this season, when potting should soon commence, the tops of the flask-shaped pseudobulbs may be broken-off and placed upon pots or small pans of sand, where, if kept moderately moist, they will soon start into growth and make fresh plants.

*C. VESTITA RUBRA*.—As before remarked, these are free-growing plants. They enjoy good heat when forming their pseudobulbs, but when in flower may be brought into the dwelling-house without injury. The flowers are very numerous, large and pure white, saving a blotch of rich reddish crimson in the throat. It blooms during winter and spring, and if kept dry the flowers last a long time in perfection. This season we have had another enemy to contend with in the shape of dense fogs, which singularly stripped our *Calanthes* of all the expanded blooms, and turned what few leaves remained upon them suddenly yellow. Native of Moulmein.

*C. VESTITA LUTEA*.—This is the exact counterpart of the preceding, saving in its having a large blotch of yellow upon the lip instead of crimson, which makes it very desirable as a contrast with the red-eyed variety; but I do not consider it so useful for head-dresses, because yellow in my estimation has a bad effect in a lady's hair. I may be wrong in this. What do my fair readers think on the matter? It is a native of Moulmein.

*C. VERTICILLATA*.—A truly lovely plant, and, what is more, a garden hybrid, having been raised in this country by crossing *C. vestita* and *Limatodes rosea*. It produces spikes from 2 to 3 feet in length, bearing immense quantities of large, rich, deep rose-coloured flowers, the throat or eye being white. I shall, however, hope to say something more respecting this plant, with the Editors' permission, when recording the results of hybridisation of Orchids at a future time.

### CYMBIDIUM.

Very few members of this genus find favour with the professional Orchid-grower, although the two species here enumerated are exceptions to this rule. Some of the less beautiful kinds are not allowed to cumber the space. One, however, which I consider should find a place in every house is *C. sinense*; true, it is dull in colour, but then its fragrance is so delightful that for this alone it cannot be too highly recommended. These remarks will probably cause a laugh at my expense from some, but I cannot cast off my love for many of these good old things, much as I love the newer or more brilliantly-coloured species which are continually being added to our collections. It must be remembered I have not included this plant in my "Century," but have thrown it in for luck, so that my readers will please remember this if the colours do not suit their fancy. *Cymbidiums* should be grown in good rough fibrous peat, with a very little sphagnum mixed with it.

They like a good supply of water during summer, but less will suffice in winter; but at no time should they be dried-up, or the lower leaves will turn yellow.

*C. EBURNEUM*.—The species is both beautiful and rare, a desideratum of Orchid-growers of all grades. The plant is very handsome when not in flower; the leaves are narrow, somewhat erect, and bright green in colour; flowers large, and thick and fleshy in texture, pure waxy-white, saving the centre of the lip, where it is stained pale yellow. It usually blooms early in spring, and lasts in full beauty several weeks. Native of Assam.

*C. MASTERSII*.—In general appearance this resembles the preceding; the foliage, however, is somewhat broader, and more pendulous. The flowers are produced during winter, the spikes bearing numerous flowers, similar to *C. eburneum*, but much smaller. Native of the East Indies.—EXPERTO CREDE.

## NEW BOOK.

*The Treasury of Botany: A Popular Dictionary of the Vegetable Kingdom.* By J. LINDLEY and T. MOORE. Longman and Co. New and revised edition, with Supplement.

We noticed and commended this book of reference when it first appeared, and its revised re-issue with a Supplement of one hundred pages entitles it to another commendation. It shall be in one sentence—It is a very useful and trustworthy book. We give a specimen from the Supplement.

"BORO DINA.—The Feejee name of a species of *Solanum* (*S. Uporo*, also known as *S. anthrophagorum*) which, according to Dr. Seemann, 'ought in Feejeean estimation to accompany a cannibal feast. It is a bushy shrub, seldom higher than 6 feet, with a dark glossy foliage, and berries of the shape, size, and colour of a Tomato. The fruit has a faint aromatic smell, and is occasionally prepared like Tomato sauce. The leaves are wrapped round the bokola as those of the taro are around pork, and baked with it on heated stones. Even the white settlers use the leaves as a pot-herb.'"

## NOTES AND GLEANINGS.

It is announced from Vienna that a process, indicated by M. Hooibrenk, for FACILITATING THE FERTILISATION OF PLANTS has proved successful in the Botanical Gardens there. The process consists simply in touching the end of the pistil—that is, the stigma—in a flower with a pencil dipped in honey, or, better, in honey having mixed with it some pollen of the plant operated upon. A *Hibiscus mexicanus*, which had never yielded fruit, having undergone this treatment, produced quite a large quantity of good seeds. With several fruit trees the process also succeeded. Further, after operating on certain branches only of trees which did not yield fruit, it was found that fruit formed on these, while the branches left in the natural state gave none. The effect, if real, may be explained by supposing that the honey retains the pollen grains on the stigma, and thus favours the formation of a pollen tube, which is indispensable to the fertilisation.

— In a letter to the French Society of Horticulture a chemist, M. Fremont, mentions that a good way of PRESERVING CUT FLOWERS in a state of freshness is to dissolve sal-ammoniac, or chlorhydrate of ammonia with the water in which the stems are put, in the proportion of five grammes per litre of water. They will thus often be kept fresh for a fortnight. The experiment is one which can be easily made.—(*English Mechanic*.)

— ALFRED DE ROTHSCHILD, Esq., has consented to preside at the thirty-first anniversary festival in aid of the funds of the GARDENERS' ROYAL BENEVOLENT INSTITUTION, to be held in the ensuing summer.

— PRIZE CUTS, of five guineas each, will be presented this year by Messrs. Sutton, at the Reading Horticultural Society's Spring and Autumn Shows; International Fruit and Vegetable Show, Belfast; Royal Berkshire Root Show, Reading; and Birmingham and Midland Counties' Show.

## CANADIAN ORCHIDS.

This peculiar and beautiful family of plants is tolerably well represented in Canada. They form an excellent example of the mutual dependence existing between the vegetable and animal kingdoms. When the flower is examined, it is evident that the only way in which most of the species belonging to this order can be fertilised, is by means of receiving the pollen

adhering to the wings and legs of insects. Thus we see that while the honey-seeking insect obtains its supply of food, it at the same time completes the final process necessary to the continued existence of the plant. Among the specimens in my collection obtained in this neighbourhood are the following:—*Orchis spectabilis*, *Habenaria fimbriata*, *H. phycodes*, *H. blephariglotidis*, *H. ciliaris*, *H. virescens*, *H. viridis*, *H. dilatata*, *H. Hookeri*, *Calopogon pulchellus*, *Cypripedium arietinum*, *C. pubescens*, *C. parviflorum*, *C. spectabile*, *C. aculea*.

Almost all of these species grow on the boggy margins of the small lakes existing in this region. The show of *Orchis* and purple-fringed species (*O. spectabilis* and *H. fimbriata*) are remarkable for the beauty of the three or four purplish flowers borne on the spike; the former, unlike the latter, prefers the wooded hillsides. The white-fringed species is delicately scented, and is susceptible of cultivation, as, notwithstanding its habitat in low grounds, it flourishes well in the common flower pot when properly watered. The beautiful little *Calopogon* is found in the wettest portions of the bog, along with the round-leaved *Sundew*. The structure of the flower in this genus affords an interesting instance of the adaptation of means to an end in Nature. The pollen, instead of being connected by threads with a sticky gland for the purpose of adhering to the stigma as in the other genera, consists of loose powdery grains. In order that these grains may adhere to the stigma, it is broad and flattened at the apex, and covered with a beautiful array of white, yellow, and purple hairs with club-shaped ends. The stemless *Lady's Slipper* (*Cypripedium acaule*) is a delicate little species, growing in the shade in moist ground, and is closely allied to the two cultivated species—*C. insigne* and *venustum*. It bears only a single flower of rose-tinted purple colour, and is far more rare than the coarser yellow-flowered species.—C. M. P., *Owen Sound*.—(*Canadian Farmer*.)

## NOTES ON VILLA AND SUBURBAN GARDENING.

**DOMESTIC GREENHOUSES.**—Before entering on a description of this apparatus, the circumstances under which it was discovered may be briefly adverted to. Mr. Ward, the gentleman to whom we are indebted for the discovery, was a surgeon residing in Wellclose Square, London. From his earliest youth Mr. Ward had been attached to botanical pursuits, but living in a densely populated neighbourhood, surrounded by manufactories and enveloped in the smoke of London in its worst form, he had been compelled to give up the cultivation of plants, until the following incident served to point-out a mode by which he could follow his favourite amusement with some degree of success. He had hurried the chrysalis of a *Sphinx* in some moist mould, which was enclosed in a close glass bottle covered with a top. In watching the bottle from day to day he observed that when exposed to the warmth of the sun the moisture rose from the mould and became condensed on the inner surface of the glass, and again fell back upon the mould during the night, thus keeping-up a continual moisture in the atmosphere within the glass. Thus the most forbidding local circumstances may be overcome; and any person, whether inhabiting the most humble or the most splendid dwelling, provided it be freely exposed for a few hours every day to the sun's light, has it in his power to rear and cultivate a miscellaneous collection of plants, to enjoy the beauty of their appearance, and to watch their progress through all the stages of their growth at an insignificant expense. To do this he must provide an apparatus consisting of a box, a stand, and a glass roof of a size according to his desires and means. We shall suppose one is wanted of a small size to stand in a window in an apartment of limited dimensions. The stand we will suppose is 1 foot 10 inches in height, the box which is to contain the soil  $8\frac{1}{2}$  inches, and the glass from 1 foot  $7\frac{1}{2}$  inches; in all 4 feet 2 inches in height by 3 feet in length, and  $1\frac{1}{2}$  foot in breadth. The bottom being properly fitted, the sides are fixed to it with brass nails, no iron being used in any part.

We now come to the preparation for the plants. Lay the bottom of the box with pieces of broken earthenware to the depth of 2 inches as an open subsoil. Next lay a stratum of turfy loam 1 inch deep, and fill-in the remainder of the space with soil composed of equal portions of peat and loam mixed, with about one-twentieth part of rough white sand free from iron. The artificial garden plot is now ready to receive the plants. Plant these in the usual manner, and then shower over them with a fine-rosed watering-pot from three to four gallons of water till the soil is pretty well saturated, and the liquid begins to run off by the two openings at the bottom. After draining thus for twenty-four hours cork-up the holes, place the glass case on the box, and the operation will be finished. After the first preparation the plants require little or no care; the case need only be opened for the removal of dead leaves, or for a little trimming when required. Plants in open flower pots are exposed to the vicissitudes of change of climate and require

constant watering, but the plants in these cases seem to be independent of any change of temperature in the air, and water themselves. The moisture rises by the sun's influence from the moistened earth, refreshes the leaves of the plants, and during the cool of the night falls to the earth again, condensed like rain and dew. In this there is a constant succession of rising and falling of moisture in imitation of the great processes of Nature daily going on in the fields around us. The plant-case is a little world in itself, in which vegetation is supported solely by the resources originally communicated to it.

**COLD PITS AND FRAMES.**—The principal requisite in preserving tender plants through the winter in these is to keep them dormant from October to the end of February, for as the growth of a plant depends more upon heat and moisture than upon other agents of healthful existence, it is obvious that the more cool and dry plants are kept, provided they do not suffer from an excess of either cold or drought, the more likely they are to be successfully preserved. For this reason both the plants and pits should be kept dry, by placing the pots on some material, such as dry ashes, that will absorb moisture, and by admitting all the air possible in favourable weather. Give air at all times when the exterior temperature is a few degrees above the freezing point, supply no water unless the plants are flagging, and then only in sufficient quantity to recruit their strength. Plants thus treated will scarcely be injured by the same amount of frost that would kill them in a growing state, provided they are kept closely covered until they are thoroughly but gradually thawed.

In protecting cold pits and frames the covering should never touch the glass, because if it do so it will absorb the heat from the pit and frames, and give it off again to the atmosphere; but if it is raised 1 inch above the glass, it repels the radiant heat, and thus a stratum of confined air is secured, which forms an excellent protecting medium. For this reason wooden shutters, frames thatched with straw, waterproof canvas or tarpauling, are superior to mats; and hence the necessity, when extra covering is required, of placing it above, and not between the usual covering and the glass.

**PLANTS IN ROOMS** should only receive water when in actual need of it; but they must be kept as near the glass as possible. *Pelargoniums* that are not so bushy as may be desired, must have the point of each shoot pinched out; and the same may be done with other plants of loose habit. Should the nights become very severe, it will be a good plan to place the plants under a table, surrounded to the ground with a large woollen cloth; and, as a further precaution, when necessary, a stone jar or two of hot water may be placed amongst them at the time of retiring for the night.

**KITCHEN GARDEN.**—Proceed with digging and trenching, except in snowy or frosty weather. The pruning and nailing of hardy fruit trees must be concluded as quickly as possible; but *Peaches* and *Apricots* will be best if left until the end of February. If the *Peas* and *Beans* sown in November appear above ground, a second crop of each must be put in at the first favourable opportunity; but if none were sown at that time, a crop of each must be put in without delay. A small crop of *Early Frame Radish* may be sown on any dry warm border sloping to the south, and may be protected by haulm or litter till the plants are up. Prepare dung, or dung and leaves where the latter are plentiful, by frequent turning, for beds for forcing *Cucumbers* and other vegetables. When these materials are dry they should be watered when turned over.—W. KEANE.

## "HOW TO GROW A ROSE."

PRAY don't think me vain. I know but little, but would impart that little to my fellow lovers of the Rose; and ere I begin I will beg of old practised hands to pass this article by, for I fear—nay, know—they will find nothing new here. I write this for the beginner, as there always are and must be beginners; else—but I won't moralise. Neither am I purposing to say how to raise new varieties edged and flaked like *Carnations* and *Picotees*, nor how to grow black Roses by budding on the *Black Currant*, nor how to grow bright sky-blue Roses by putting cobalt or sulphate of copper in their drinking water; for

"Thus the craftsman thinks to grace the Rose—  
Plucks a mould flower  
For his gold flower,  
Uses fine things that efface the Rose;"

but to make the most of what we have.

"First catch your hare" is a good old maxim, and "First get some cuttings or plants of *Manetti*" will be found an indispensable one to growing *Roses* on the *Manetti* stock. And having done so, select good medium-sized, well-ripened shoots of the current year; cut them into lengths of 8 to 12 inches, according to the number or closeness of the eyes thereon—a cutting 8 inches long is equally as good as another of 12 inches

with the same number of eyes; cut the bottom end of the cutting immediately below an eye, clean and level, without stooping; the top end to be cut just above an eye. All eyes are now to be cut clean out except the top two (see *fig. 1*).

I find the cuttings take better and grow stronger if two or three buds are left on than they do if one only is left.

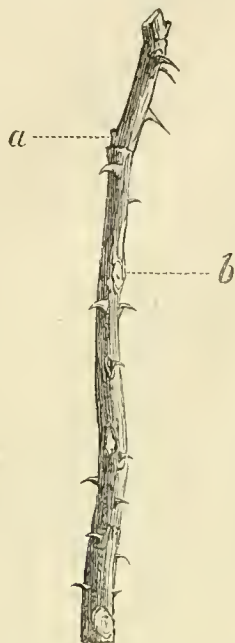


Fig. 1.—One-third natural size. Cutting of Manetti ready for planting *a*, Lowest bud not cut out, and when planted to be earthed-up to *b*, Highest cut-out bud up to which the cutting is to be inserted in the ground.



Fig. 2.—One-third natural size. *a*, Rose shoot with buds. *b*, Stock showing T-cut for bud. *c*, Bud or shield just cut from shoot.

The cutting is now ready for planting, and the sooner this is done the better. I do not mean the same day, but if you let the cuttings lay a few days after preparing you must expect to see unsightly gaps where they have failed. My plan is to mark out a plot of ground in rows thus: Two rows 18 inches apart, then a space of 3 feet, then two rows of 18 inches apart, and so on till the plot or quarter is full. Having pegged-out the ground, we then set the line, chop out a shallow trench

with the hoe, and plant the cuttings. As to distance, it is a good deal a matter of taste, but 10 inches is a nice distance; either an inch or two closer or further apart will be of little consequence. Slightly lean the tops of the cuttings towards each other in the double or 18-inches-apart rows (see *fig. 3*). Let the cuttings be inserted in the ground to the topmost cut-out eye (see *fig. 1 b*), then tread very firmly, and earth-up so as to bring the soil level with the lower of the two eyes left intact (*fig. 1 a*).

The cuttings may now be left to themselves till the weeds begin to grow, when a scratch-hoeing will be requisite and advisable, both to destroy the weeds and to freshen-up the surface-soil, as the cuttings will be much benefited thereby. Should there be frost and light rains during the winter it will be well, when the soil is dry enough, to walk up the rows and tread firm again, as the frost will be found to have loosened the cuttings, which is not good for them. If heavy rains succeed the frost there will be no need, as it will have made the soil firm enough. September and October are the best months to get-in cuttings, but if you go in for a lot you may keep on planting till the end of the year. The small and rather unripe shoots may be cut into lengths and planted closely in rows to grow into plants for the next year, when they may be planted out during the winter for budding in the following year, or potted to use for grafting in the spring.



Fig. 3.—One-half natural size. End of double or 18-inches-apart rows. Soil cleared from stocks for budding. Shows also how to plant, leaning the tops towards each other. *a*, Bud inserted, top part of bark cut off so as to fit that of stock. *b*, Ditto tied.

There will be nothing else to do till budding time, except to keep down weeds. Do not be in any great hurry, as the Manetti is not so quickly unfit for budding as the Briar, and it is best to bud the Manetti after you have done the Briar. I say after the Briars, as I hope you will not give the Briar quite up; in fact, you must have it for Teas, &c., for although Teas will do well on the Boursault and some others, still the Briar for Teas and Noisettes. The first week in August is quite soon enough to begin, as I find, if the Manetti is budded too soon in the season, it is liable to overgrow and cover-up the bud; besides, you will get better, larger, and stronger buds later in the season, and they will not be so liable to start then. And now, all ye whose backs are long, who measure more than 42 inches round where the fifth button on your waistcoat is, who are liable to bilious attacks, headaches, swimming in the head, rush of blood to the brain, and other such evils that mankind is favoured with—take my advice, Don't go in for budding your own Manetti, but enjoy the good things of this world while ye may, and buy your Manetti plants ready worked, because it is possible, nay, probable, that

it wo'n't agree with you; and if standing on your head all day, with the glass at 98°, is not one of your special enjoyments, you wo'n't enjoy budding Manetti.

Well, all is ready, and buds got, nice plump ones. In getting buds, nice half-ripe shoots full of good buds should be taken where they can best be spared. I have been asked, "Do you cut the buds one at a time off the wood, or cut lengths of wood with several buds on?" Of course the latter (see piece

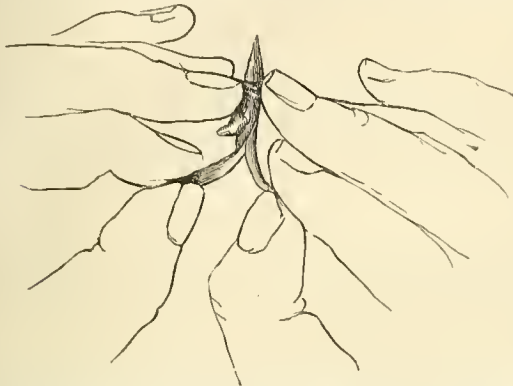


Fig. 4.—How to hold the bud when pulling-out the wood. As the bark and wood separate, slip the third fingers of both hands downwards gradually till the end is reached; by so doing the bark will hardly ever break.

of Rose shoot with buds, *fig. 2 a*)—I remember the time when I didn't know—set the shoots in a small can with an inch of water to keep them fresh; clear away the earth from your stocks—don't clear too many at once, as the bark soon dies, and then wo'n't work so well—down, or nearly down, to the roots; just rub your thumb and finger round the stock to clear from soil and thorns; make a cross T-cut (*fig. 2 b*), and insert the buds as in *fig. 3 a*; tie in the regular way (*fig. 3 b*), and in about a month the cotton may be removed. Should any buds have missed, insert others at once just below where the first



Fig. 5.—Stock with growing bud in May; top of stock properly cut off.

was put in. You may do this till quite the second week in October if the weather is warm, which it generally is, with a very good chance of the bud taking.

Oh! ah!—there now! I have forgotten I am writing this expressly for those who do not know. I well remember, when I began, the annoyance and vexation it was to me to find almost all writers "presume" that everyone knows such and such a thing as to the minor details, and that was the very information I wanted, and I have not said a word about pre-

paring and inserting the buds. Well, then, get good shoots of the sorts you are going to bud, with plenty of "fat frog-nose" shaped buds, such shoots as have borne flowers, or are about to do so; often these latter yield the best buds, as the former will have sometimes started, or even blind shoots—*i.e.*, those without flower buds, if they are not too gross and strong, or unripe and pithy. Medium-sized shoots are best, about the thickness of a "churchwarden clay" pipe-stem. As soon after you get the Rose shoot with buds I advise cutting-off the leaves, so as to leave the footstalk only (see *fig. 2 a*), as by leaving the leaves on, the bark of the shoot is much sooner shrivelled-up through evaporation than if the leaves are cut off, as there shown, and will keep plump and fresh much longer. Cut out the bud, as in *fig. 2 a* and *c*, with a thin slice of wood, and in budding Manetti you want a longer heel to the bud than for the Briar. Cut the bud with the bark about an inch long, about two-thirds above the bud, and one-third below; remove the wood as in *fig. 4*. I cannot explain it, but take

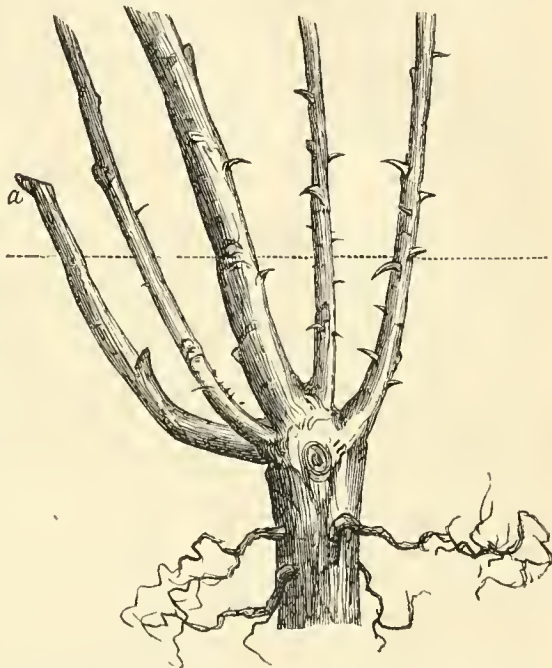


Fig. 6.—Finished plant, to be planted 4 inches above the junction of stock and scion, or to dotted line. *a*, How to cut back in March.

the bud in the left hand as shown there, take hold of the wood with the nails of the right thumb and finger, and pull it out. Do it without fear, and holdly, and you will not spoil one in a hundred. Now make a cut in the bark of the stock, as in *fig. 2 b*, with a cross-cut—mind your knife is always very sharp—lift the bark with the back of your budding-knife, and insert the bud, as shown in *fig. 3 a*. Push it well home; cut off level with the cross-cut, so that the bark may fit well with that of the stock; tie with candle cotton, not too tight, and tie with the knot behind, on the opposite side to where the bud is inserted (*fig. 3 b*).

I have been asked, "Should the earth be returned, so as to cover the stocks as before budding? Should the stocks be pruned or shortened now?" No, to both questions; leave them as they are, and the stronger they grow now the better plants you will get next year. In September and the following months to the close of the year, but the sooner the better, the shoots may be cut from the budded stocks to make cuttings as before, otherwise do not meddle with them till April, and then go over them often, and keep down the new shoots that the Manetti will be numerous and vigorously making. By that means the bud will be induced to start, if it has not done so already, and when grown 6 inches or more in May, cut the stock clean off just above the bud (see *fig. 5*). The cleaner this is done the better, although the Manetti stands rougher treatment than the Briar, and so is not of so much consequence. I even towards the end of May cut down those whose buds have not started, and so either make them start or kill

them, for a Manetti plant in a row of new-budded stuff is such a nuisance, it grows at such a rate as to smother the young plants right and left. Where any buds have missed altogether I pull-up the stocks to avoid the evil consequences of their great growth, as, when you are well off for stocks, a few are of no great note, especially when not wanted. Carefully remove any suckers that may appear, as, let the cuttings be ever so well prepared, a few will show themselves the first year; an old chisel is a capital tool for the purpose. In budding stock plants, the only difference is that you plant your cuttings in a piece of spare ground very closely, leaving room, however, to hoe between the rows to keep down weeds, and in the autumn of the following year lift them and plant very shallow in rows, or as you like. Earth-up the same as for cuttings, and in budding let the bud be put in as near the root as possible. This is really the royal way to work Manetti, as you can get the bud so much closer to the roots than by working the cuttings as planted; but in either way the practice is the same, and the instructions for working struck cuttings will apply in every respect. The new shoot from the bud will require staking and tying, or the wind will blow many out, and is almost as fatal, if not tied, as it is to the worked Briar. I have only now to say that in setting the plants out, plant them deeply, so as to cover the union of the stock and bud 4 inches below the surface (see fig. 6).

I have seen Manetti-worked plants, when they have been worked too far from the roots, stuck in with the union 5 or 6 or more inches above the ground and—doing wonderfully bad!

In pruning the plants cut them down in March to from 2 to 12 inches, according to the strength of the shoots, and so as to leave the top bud pointing outwards—that is, from the centre of the plant. It is always well to have an eye to the future form of the plant (see fig. 6 a) and keep the plant well open by thinning-out. Keep a sharp look-out for suckers; they will not trouble you much, but if one do get ahead it will utterly spoil and kill the plant, the growth is so strong and rapid. I was in a garden last summer where the dwarf Roses were almost without exception Manetti plants, and the proprietor, and his lady especially, wondered they never bloomed. Truly they must have been very badly worked, but in the present state of competition and love of cheapness I do not wonder at that. I am sure properly-worked Manetti plants cannot be grown at the price I have seen them advertised.

In No. 663, December 11, 1873, p. 463, Mr. J. Hinton speaks of the Manetti having flowered for the second time in his garden. This is a common thing with me every year, and on looking about a day or two back I found a truss of ripe heps which, out of curiosity, I have since gathered and sown. Ly-the-bye—a lucky thought—Mr. Hinton is mistaken in thinking I am “his anonymous correspondent.” I never do anything anonymously; besides, I love La France, and have had to do battle on its behalf many times in this town, one or two amateurs here abusing it unjustly—most unjustly, I think. I consider it one of our very best Roses, and I think I can see why such men as Mr. B. Cant call it names. They grow maiden plants only, on which it, like some others, is hardly ever fit to show; but use it well and grow it on and it is simply grand. If you want to find the way to a lady's heart, give her a good bloom of La France and ask her to smell it! “AMATEUR”—on the same page 463—doubts the vigour of Roses on Manetti. I have now in my garden John Hopper, Duke of Edinburgh, Charles Lefebvre, and others, with shoots made last year 7 feet long and as thick as your thumb, enough for one season and all purposes.—W. FARREN, Cambridge.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

SINCE January came in we have been enabled, almost without interruption, to continue out-of-doors operations in this department. Pruning is finished, and digging well advanced. Should any fruit trees remain to be planted the work ought to be done at once; they seldom succeed well the following season if planted after the buds have swelled considerably. The fruit buds on our pyramid Pear trees are in a very forward state.

Attention must be given to quarters of Cabbage plants; any spaces where plants have died-off to be filled with plants from a reserve bed. Stir the ground between the rows. Sow Cauliflower in boxes, to succeed that sown in autumn and now growing in hand-lights or under a wall to be planted-out. Celery for the earliest crop may also be sown in the same way as the Cauliflower; place the boxes in a very gentle hotbed.

Those who have not a forcing house for Cucumbers may now

sow in a hotbed. The best way is to make up a small bed for the seeds, and grow the plants on in pots till they have made good growth, when the frame should be ready for the plants; but do not plant them out if there is much steam, even if it smell “sweet.” It is a good plan to place 3 or 4 inches of old manure over the surface of the beds, and above this some freshly-cut turf with the grass side under; this will to a very large extent serve to keep the steam under, and allow the plants to be put out sooner than they otherwise would. Perhaps the best materials for a hotbed are leaves and stable manure in about equal proportions, to be thrown together in a heap, and allowed to lie for ten days, and to be turned over once or twice in that time. Before commencing to build up the frame some rough faggots of wood should be placed on the ground, and on these the fermenting material should be put; the principal object of this is to cause the heat to penetrate underneath the manure when binings are applied after the heat has declined in the frame.

Mice have been troublesome: they unearthed the newly-sown Radish seeds, and dug out the early Peas which are just coming through the ground.

### FORCING HOUSES.

*Pine Apples.*—Plants throwing up fruit will now require a moderately moist atmosphere, and the temperature not to fall below 65° in cold weather; on mild nights 70° will be better. It is well for head gardeners not to draw a hard-and-fast line in regard to temperature, especially in forcing houses. As the temperature varies out of doors, so it ought, to a certain extent, in the houses. To-night the thermometer may register 7° of frost, and on the following night it may not fall below 45°, and very often even greater discrepancies occur than are noted. Is it not folly to try to keep up an even temperature in hothouses under such circumstances? The suckers which were potted early in the autumn last year must now be potted; most of them will be planted at once in their fruiting pots.

We do not now use 15-inch pots even for the strongest-growing sorts, but we cannot obtain large fruit in 9-inch pots. When on a visit to Mr. W. Thomson's establishment at Clovenfords, near Galashiels, two or three years ago, it was marvellous to see the large handsome fruit swelling and ripening on plants of the Smooth-leaved Cayenne variety that would weigh 8 or 9 lbs., and none of the pots seemed to be more than 9 inches in diameter. It may be owing to the soil, or it may be owing to superior culture, to houses specially designed to the wants of the plants, or all combined. In our own experience we cannot get such fruit in 9-inch pots as in those 11 or 12 inches diameter. The loam to be obtained here is light and sandy, and in it the plants grow very freely, but the soil seems to become exhausted before the fruit is thrown-up. In this, as in many other things, circumstances alter cases. A good potting material is composed of rotted turf, crushed bones, and a sixth part of decayed stable manure. An 8-inch potful of bones will be sufficient for a barrowload of turf. Drain the pots well, and place some fibry material over the drainage, disengage the roots a little, and ram the compost in quite firmly. Plunge the pots in a bottom heat of 90°, and fresh rootlets will soon form. Do not give any water at the roots for a week or ten days after the plants are potted.

We have been getting ready the soil for the first house of *Melons*. There is no old-cut turfy loam available; but we have some old spit loam of a clayey nature. This will be mixed with an equal proportion of the light turfy loam, and with the addition of a sixth part of rotted manure will make an excellent compost for Melons. There is no fermenting material used in the beds—the bottom is filled up with brickbats, leaving about 18 inches for the soil; and only one-half of the bed is filled at the time the plants are put out, the other half being made-up with fresh soil as soon as all the fruits are set. Where Melons are grown in beds or pits by the aid of fermenting material alone, the seeds may be now sown as has been directed for Cucumbers, the method of making up the beds being the same in each case.

*Cucumbers* in heated houses owing to the want of sun are making but little growth, and that very feeble. A minimum temperature of 65° is maintained, with a moderately moist atmosphere; too much moisture in the house causes an unhealthy growth. The earliest Strawberry plants are flowering profusely; going over the blossoms every forenoon with a small camel-hair brush facilitates setting. Every alternate watering ought to be with manure water. Cow manure or sheep's droppings is as good as any other. Guano water is easily made, but it is not desirable to use it on Strawberry plants in pots. *Dwarf Kidney Beans* should be well attended to, as a regular supply of this vegetable is very desirable, and is usually much appreciated. The pods should be gathered as they are ready, tied-up in small bundles, and placed in shallow dishes with just enough water to cover the stalk ends. Make fresh sowings if necessary. Perhaps the best way is to sow in boxes thickly, and as soon as the seed leaves are fully developed pot-off four plants in a 7-inch pot. Sowed Tomatoes in a little bottom heat in the Cucumber house. We do not require a larger supply of this wholesome esculent than can be grown in a dozen pots. The fruits are

generally ripe by the last week of May or the first in June. No other variety yet tried is so suitable for forcing as the Orangefield Dwarf Prolific; but being much pleased with the excellent crops of Hathaway's Excelisior which were grown on the open walls at Chiswick last year, this variety is being tried against it as a forcing sort. The fruit, moreover, is quite round, without ribs.

#### STOVE AND GREENHOUSE.

One of the most valuable occupants of the stove for furnishing us with cut flowers is the *Eucharis amazonica*. This plant is, if liberally treated, almost a continuous bloomer. Now is a good time to repot the plants; turn them out of the pots in which they have been growing, and if the bulbs are too close together separate them from each other, and allow more space when repotting. Turfy loam, with a little leaf mould and rotted manure, is a good compost for them. Liberal drainage with copious supplies of water when the plants are established is the best treatment. Slugs have been troublesome amongst the Orchids they are most readily destroyed by looking for them with a light at night when they will be out feeding. In the greenhouse little has been done, except tying and training plants. Hyacinths throwing up flower trusses have sticks placed to them before there is any danger of the spikes falling over and snapping at the base.

Stage Pelargoniums in small pots are quite ready to be repotted, and will be attended to as soon as we can spare time. Those plants intended for early flowering should be potted at once. Plants that were cut down late in the season and intended to flower into July, may be repotted late in February or early in March. Look carefully after Cyclamens. If the plants are large there is some danger of both flower and leaf stalks being damaged through mould. Any decaying matter should be removed. See that all plants removed to the conservatory from forcing houses are not exposed to too sudden changes of temperature, and let them not be placed in draughts.

#### FLOWER GARDEN AND SHRUBBERY.

In this department all fallen leaves should have been removed, dead and decaying parts cut from trees and shrubs, and planting finished. Specimens that have just been planted should be mulched with rotten manure, and supports put to them to prevent the wind from loosening the roots. Turf whereon there are inequalities should be relaid at once; the turf must be cut and rolled back, and the inequalities filled-up with fine soil. We have begun to prune the Roses. They are now bursting into leaf; and allowing the growth to progress as they are, will only serve to weaken the plants. Hyacinths and Tulips are through the ground. Snowdrops are in flower, and Crocuses will open in a few days. Wheeling-on rotted manure to the flower borders and digging them.—J. DOUGLAS.

### TRADE CATALOGUES RECEIVED.

William Paul, Waltham Cross, Herts.—*Seed Catalogue*, 1874. W. Cuthash & Son, Highgate, London, N.—*Catalogue of Vegetable, Flower, and Farm Seeds*.

Charles Turner, Royal Nurseries, Slough.—*New Pelargonium* for 1874.

W. Bull, King's Road, Chelsea, London, S.W.—*Retail List of Select Flower, Vegetable, and Agricultural Seeds and New Plants*.

Smith & Simons, 36 & 38, Howard Street, St. Enoch Square, Glasgow.—*Cultural Guide and Descriptive Seed Catalogue*, 1874.

R. B. Mathews, 65 and 67, Victoria Street, Belfast.—*Mathews' Sower and Reaper: a Seed and Nursery Catalogue, with Cultural Guide*.

Hooper & Co., Covent Garden Market, London, W.C.—*Gardening Guide and General Catalogue*.

Robertson & Galloway, 157, Ingram Street, Glasgow, and Helensburgh.—*Descriptive Seed Catalogue and Amateur's Pocket Guide to the Kitchen and Flower Garden*.

J. Jefferies & Sons, Cirencester.—*Seed Catalogue*, 1874.

T. Bunyard & Sons, Maidstone, Ashford, and Allington.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds*.

Walter Dawson, Spike Bridge Nursery (The Cemetery), Coventry.—*Catalogue of Hardy Trees, Shrubs, &c.*

Felton & Sons, 23, High Street, Birmingham.—*Seed Catalogue*.

Lawson Seed and Nursery Company, 1, George IV. Bridge, Edinburgh, and Southwark Street, London, S.E.—*List of Garden Seeds*.

Jamea Dickson & Sons, Newton Nurseries, and 108, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, Gardening Tools, &c.*—*Catalogue of Forest Trees, Shrubs, &c.*—*List of Gladioli*.

W. Rolleston & Sons, Tooting, London.—*General Seed Catalogue, comprising a List of Seeds of Subtropical Plants, &c.*

T. C. Maxwell & Brothers, Geneva, New York.—*Catalogue of Ornamental Trees, Shrubs, Roses, &c.*

Little & Ballantyne, 44, English Street, Carlisle, and 36, Mark Lane, London.—*Spring Seed Guide*.

W. Barron & Son, 16, Market Street, Nottingham, and Elvaston Nurseries, Borrowash, near Derby.—*Descriptive List of Choice Vegetable, Agricultural and Flower Seeds, &c.*

F. C. Heinemann, Erfurt.—*General Catalog der Pflanzen, und Samen-Handlung*.

Barr & Sugden, 12, King Street, Covent Garden, London, W.C.—*Descriptive Spring Catalogue of Choice Seeds for Flower and Kitchen Garden*.

Dickson & Robinson, 23, Market Place, Manchester.—*Catalogue of Vegetable and Flower Seeds, Horticultural Implements, &c.*—*List of Gladiolus, &c.*

### TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

PERSONALITIES.—A Well-wisher has written to say that "very severe strictures" on THE JOURNAL OF HORTICULTURE have appeared two weeks following in an Irish gardening contemporary. We are not curious to know what these strictures are. We care only for the good opinion of our readers, whose appreciation of the Journal has raised it to a position unprecedented in circulation among gardening periodicals, and what our Irish contemporary thinks of us is a matter of pure indifference. There are only two objects he can have in making these strictures, the one to benefit himself, and the other to elevate horticulture in Ireland, and if he thinks he is doing either or both let him indulge himself; but from what we know of the high-class gardeners of Ireland they will not be complimented by being furnished with a tirade of trash which would not be tolerated in any gardening publication on this side of the Channel. Our large and increasing circulation in Ireland may afford a clue to our contemporary's strictures.

SINGLE WHITE PRIMROSES (G.C.).—If you will send your address to Mr. Robson, of Linton Park, Maidstone, he will put you in the way of obtaining what you want.

EVERGREEN FLOWERING SHRUBS FOR A SMALL LAWN (Topsey).—For a lawn, in an exposed situation, 72 feet by 38, we would not have the shrubs dispersed either singly or in small groups over the entire surface, but confine them to two or three small detached clumps at each end, and to a circular bed, 18 feet in diameter, in the centre of the lawn, filling the circle with a selection that would possess much of beauty and interest during the greater part of the year. Such a circle would require about thirty plants. A dozen Rhododendrons might be grouped in the centre, surrounding them with a broad fringe of the choicest dwarf-growing evergreen flowering and berry-bearing shrubs. Of Rhododendrons, choose Mrs. John Clutton, John Waterer, Fleur de Marie, Old Pert, Mrs. R. S. Holford, Purity, Charles Dickens, Minnie, Duc de Brabant, Alarm, Mrs. G. H. W. Henage, and Elfrida; and of other shrubs, Berberis Darwinii, Berberis stenophylla, Erica mediterranea, Ligustrum japonicum, Kalmia latifolia, Ledum latifolium, Persea angustifolia, Persea mucronata, Skimmia japonica, Andromeda floribunda, Mahonia Aquifolium, Rhododendron ferrugineum, Menziesia polifolia, Menziesia polifolia alba, Cotoneaster Simonsii, Erica australis, E. lanceolata, and E. Alportii. For the end clumps choose Spartium junceum (Yellow Spanish Broom), Cytisus albus (White Broom of Portugal), Ulex europea flore-pleno, Berberis japonica, Arbutus Rollissonii, and a few Rhododendrons.

SELECT CARNATIONS (E. F. Richardson).—Scarlet Bizarres: Admiral Curzon, Lord Lewisham, Sir J. Paxton, William Pitt, Guardsman, Mars. Crimson Bizarres: Isaac Wilkinson, Eccentric Jack, Graceless Tom, Jenny Lind, Lord Raglan, Rideman, The Lamplighter. Pink and Purple Bizarres: Falconbridge, Purity. Purple Flakes: Ascendant, Dr. Foster, Earl of Stamford, Mayor of Nottingham, True Blue. Scarlet Flakes: Christopher Sly, Cradley Pet, Justice Shallow, Mr. Battersby, Superb. Rose Flakes: Mrs. Frederic Burnaby, Sybil, George Tagwell, James Merryweather, John Keet.

SELECT PICOTEES (Idem).—Red-edged: Bertie, Ensign, Mrs. Horoby, Miss Small, Mrs. Keynes, Princess of Wales, Sylvia, Mrs. Little, Exhibition, Forester, Lord Valencia, Mrs. Norman. Purple-edged: Ethel, Alliance, Chanticleer, Edith, Medina, Norfolk Beauty, Admirer, Amy Robart, Cynthia, Frances, Jessie, Mabel, Mary. Rose and Scarlet-edged: Edith Dombria, Juliana, Mrs. Fordham, Gem of Roses, Mrs. Fisher, Obadiah. Yellow ground: Canary, Claude, Gold Button, Jupiter, Seraph, Sovereign. "Florist's Flowers," which you can have free by post from our office for 5d., treats on the culture.

TUBS FOR STOVE CLIMBERS (F. F., Dublin).—It would answer to have slate tubs or boxes for the growing of the climbers, but we should have a border over the hot-water pipes, and it seems you have at present one 3 feet wide and 34 feet high or deep. We presume it has a wall forming the bed; if not, we should build a wall a brick thick 3 inches higher than the hot-water pipes, and a 4½-inch wall against the back wall to the same height, and have flags or slates reaching from wall to wall to form the bottom of the border. Your pipes will therefore be in a chamber beneath, and this being open at one or both ends, the roots of the climbers will be benefited by the heat from the pipes. We should then carry up the wall outside 4½ inches thick, the lower course pigeon-holed, and the top course laid in cement, and capped with the same, so as to resemble a rounded curbstone, which will give a neat appearance and stability to the work. The brickwork should be taken across the ends, should not be less than 2 feet high, and need not be more than 2 feet 6 inches. At the bottom, 6 inches of rubble will be needed for drainage, and a layer of turves over it, so as to keep the drainage free. The border should be filled high with soil to allow for settling, and it is well to divide it crosswise, so as to confine the roots of each climber to their proper limits. Passiflora quadrangularis may be one of the climbers, but it would also of itself occupy the wall of a large house. P. Decaisneana is larger-flowered and scented, and gives as fine, if not finer fruit. We should not have any of the Passifloras against the back wall, but have them planted so as to train on the rafters of the house. Euphorbia jacinthiflora answers well, also Allamandas, but the finest of subjects for the back wall of a stove is the very beautiful-leaved Cissus discolor. For the roof have Passiflora princeps.

SHADING CUCUMBER HOUSE (W.S.).—The best material is tiffany, and fixed to a roller, so as to move up and down at pleasure. They are liable to be moved and torn by wind, but that may be prevented by having linen tape sewn up each edge, and if the roller is properly secured it cannot be moved

by the wind. As to breakage of glass, we have not had anything to complain of. There are blinds made of strips of wood woven together, named pinoleum, or tropical revolving blinds, which are very neat, especially those painted green. The price varies according to quality. The green-painted are about 5d. per square foot, which is more than nine times the price of a shading material which we consider more suitable. The pinoleum may be had through any of the principal nurserymen advertising in our columns.

**COMPOST FOR PLANTS (F. P. A. G.).**—For *Stephanotis floribunda* two parts sandy fibrous peat, one part each light fibrous loam and leaf soil, with one-sixth of silver sand. For *Hoya carnea* equal parts sandy fibrous peat, fibrous light loam, old cow dung, charcoal in lumps from the size of a pea to that of a walnut, broken bricks, and old lime rubbish, well mixed. For Begonias, fibrous loam two parts, leaf soil one part, half a part of sandy peat, and a sixth of silver sand, with a few pieces of charcoal. For Abutilons, light fibrous loam and sandy peat in equal parts, one-fourth leaf soil, and a sixth each of silver or sharp sand and pieces of charcoal. Lycopodiums and Maiden-hair Ferns succeed in a compost of three parts sandy fibrous peat, one part yellow loam, and one part, in equal proportions, of sandstone broken to the size of a hazel nut, silver sand, and charcoal, the peat and loam broken-up small, but not sifted, except for small plants, and the whole well mixed.

**THRIPS ON AZALEA (Thomas).**—The sprigs of Azalea are infested with thrips, and the other plants are, no doubt, attacked by the same insects. The best remedy is to fumigate with tobacco. Choose a calm evening, shut-up the house closely when the leaves are dry, and fill it with tobacco smoke. Repeat the fumigation the next night but one, and the following day syringe the plants thoroughly, especially the Azaleas, on the under side of the leaves. It will be necessary to examine the plants frequently, and when you find any thrips fumigate the house at once. The insect may be kept under by frequent sprinklings of water and forcible syringings on the under sides of the leaves during growth. We do not recognise the sprig of plant sent us. Plants sent to name should be good specimens and in flower. In repotting Ferns it is not necessary to plunge them in bottom heat.

**FORCING POTATOES (Q. S. P.).**—For a frame 12 feet by 6 feet four barrowfuls of thoroughly rotted manure will be sufficient. It should be mixed with the soil, which ought not to be less than 10 inches deep, the Potato sets being planted 4 inches deep; but if we understand you aright, you want to know what depth of fermenting dung to place under the soil. It should not be less than 3 feet, and the bed ought to be somewhat higher to allow for settling. The Potatoes should not be planted until the bed has a temperature at 10 inches deep of 75°, not more. The temperature of the frame may be 50° to 55° at night, and 65° to 75° by day, and the amount of air to be given is dependant on the weather. In fine mild weather too much cannot be given; and though we grow them in the above temperatures in houses in frames, we keep them quite cool, being careful only to save them from frost. Myatt's Prolific Ashleaf, or Veitch's Improved Ashleaf, is good.

**COMPOST HEAP TURNING (J. P.).**—The mud you have taken from the pond so recently as December, and placed in alternate layers with lime, we should at once turn over if this can be done without converting it into a muddy mortar-like mass, and whilst the lime is quick, so as to incorporate it with the soil; but if it be very wet, and the compost in turning forms a soapy mass, leave it as it is until it becomes dry, then turn it, and next autumn turn it again, adding more lime. Left until spring it will be in good condition to apply to the land.

**VINE BORDER INSIDE HOUSE (W. Y.).**—There is nothing to hinder your forming the border inside the house. It should be properly drained, and be not less than 2 feet 6 inches deep, clear of the drainage, which ought to be 6 inches deep, better 9 inches, and have drains to take away superfluous water. The border will be on the north side of the house, and the Vines may be planted on that side, training them up the rafters to the other side. We should, as you have plants in the house, have the Vines planted 3 feet 6 inches or 4 feet apart, and take them directly across the house. The shade they will give in summer would be beneficial rather than injurious, and in winter the Vines will be leafless. It will hardly be doing the Vines justice to train them to the north side of the house only; and notwithstanding the credit you would have from having nice flowers, you will find Grapes will afford greater satisfaction to your employers. A Peach tree would not thrive satisfactorily on the north wall. The glass you sent us, which is mill-ribbed glass, will answer for a house for Peaches or Vines.

**MANURING VINE BORDER (Town Gardener).**—Good turfy loam and horse droppings without straw equal parts, well mixed, the loam chopped-up fine, and to every six bushels or barrowfuls add a bushel of half-inch bones and the same quantity of soot, placing it on the border, after slightly loosening the surface, about an inch thick. It is suitable alike for inside or outside Vine borders.

**PREVENTING GOOSEBERRY CATERPILLARS (Idem).**—Cover the ground all round the bushes when the buds begin to swell with fresh tan from the tanyard 2 or 3 inches thick, placing it up to the stem and as far as the branches extend, or 2 or 3 feet from the stem all round. Let it remain throughout the summer, and in autumn dig it in.

**ORCHIDS IN VINERY (Idem).**—There are a number of Orchids that will succeed in a vinery, but we should advise you to cultivate those adapted for cool treatment. Their cultivation is not difficult, but an amateur would do well to provide himself with a work on Orchid treatment.

**PROPORTIONS FOR A VINE-BORDER COMPOST (A. K.).**—To a cartload of turf, which is a vague term, you may add three bushels of half-inch bones, and the same quantity of charcoal. For the early house we should have Black Hamburg, Mill Hill Hamburg, Buckland Sweetwater, Foster's White Seedling, and White Frontignan.

**ARAUCARIA IMBRICATA LOSING BRANCHES (J. C.).**—The most likely cause is the heavy clay soil with water lodging in the subsoil; or, owing to the elevated position, the lower branches may suffer from the strong current of air. It is, however, a common occurrence, and no remedy has been found, though various suggestions have been made from time to time both as to cause and prevention. Shelter, not necessarily of great high trees, but of hills planted on the slope, or shrubs, or even hedges, so as to prevent the wind from violently moving the branches to and fro, would be beneficial. Our Araucarias are all well furnished to the ground; they are sheltered all round by shrubs, but still open enough to allow room for growth.

**TREE CARNATIONS NOT FLOWERING (C. R. A.).**—Your cuttings put-in last April, and which were stopped, have done very well to make bushy plants, and the reason they have not formed flower stems is the lateness of the striking and the stopping. Your placing them in a Cucumber house will cause them to grow very rapidly, and the flower stems will be weak and

spindling, and very likely the flower buds will be abortive. A temperature of 50° to 55° is sufficiently high for forcing Carnations successfully, the former being the minimum, and the latter the maximum, from fire heat. To flower Tree Carnations well in winter, a temperature of 50° at night from fire heat is necessary, and it is equally necessary that the plants be strong and well furnished by September, the pots being full of healthy roots. We have now old plants flowering in a greenhouse, and we find they open their flowers more freely in a low temperature than young plants. Our young plants, struck about the same time as yours, will not flower until May, and that is earlier than yours will do if you remove them to a greenhouse, which we advise, placing them in a light airy position.

**EARLY PEAS (W. M. P.).**—We quite agree with you in opinion of the firm you mention; but if we inserted your note we should have half a dozen others from friends of other seedsmen.

**MISTLETOE PROPAGATION (B. G.).**—The seeds were probably taken by birds. We advise you to try again, from the present time to the end of March inclusive being the best season for sowing the berries. This may be done by making two cuts on the under side of the branch of an Apple, Crab, Thorn, or Lime tree in the shape of a V, the cuts being made through the bark quite to the wood; raising the tongue of bark made by the cuts, taking care not to break it, squeeze from the berries one or two seeds neatly under the bark, and let the tongue back into its place; the operation is then complete. We have had them grow freely by squeezing the seeds from the berries on a smooth part of the bark on the under side of the branches, the seeds adhering to the branches by the glutinous matter. You may also graft early in May, making an incision in the bark of the tree, and inserting into it a thin slice of Mistletoe with a bud and leaf or leaves at the end; or you may put in larger pieces of Mistletoe, taking a piece of wood from the tree, so as to correspond with the graft, the latter being prepared as in notch-grafting—with this difference, that for the Mistletoe an incision is made below the notch, as in crown-grafting, to receive the scion, a shoulder being left on the scion to rest on the notch made in the stock. Budding may be performed from the beginning to the middle of May, the buds being put in with the wood, a short heel of wood being retained below the bud for insertion.

**FELT COVERING ON VINE BORDER (Idem).**—The felt covering will not do the border the least harm, nor deprive it of the sun more than coverings of stable litter, leaves, or wooden shutters, and will throw off rain and retain warmth. We should only remove it on fine bright days, replacing it at night before May, the border being in a proper state as to moisture.

**WATER RAM.**—"A. D." wants information as follows:—Given a piece of ground, of an elevation lower than the house, which contains springs, must you tap a spring and create an artificial stream in order to work the ram, or can you do it by sinking a well and attaching the ram to that? If a stream is necessary, then what fall is required?

**THE ONION PLANT (A Working Lady).**—We are informed that this plant (see p. 86) is *Scilla (Urginea) maritima*, which is often grown under that name in cottage windows.

**STOVE PLANTS (F. T.).**—We will consider your suggestion; but the myriads are overwhelming.

**CHAPMAN'S PACKING BOXES (J. S.).**—We do not know the present address of the maker.

**POULTRY MANURE (H. M.).**—Any gardener in your neighbourhood ought to be well pleased to fetch it, as you offer it gratis. If you inform us of your full direction we probably could aid you.

**PLANTING PEAR TREES (G. W.).**—Pear trees worked on the Quince stock should be planted so that the union of the stock with the scion may be level with the surface of the soil. Those worked on the Pear should not be planted deeper than they were when growing in the nursery.

**GRAFTING COTONEASTER (Idem).**—It may be grafted as you purpose. We have been perfectly successful in grafting evergreens by performing the operation just before they start into growth in the spring.

**CHAUMONTEL PEARS BITTER (G. G. K.).**—Our Pears of this sort from pot trees were excellent, but we could only obtain fruit fit to eat in very warm seasons from standard trees out of doors. Last season was not a good one for ripening Pears, and the only remedy is to grow the finer sorts in orchard houses or on warm walls. Perhaps your fruit will do for baking.

**VINES PLANTED LAST AUTUMN (An Ignoramus).**—It is right to rub-off all the eyes, except two as near the base of the plant as possible. But it is also as well (unless you wish to have a great number of sorts) to allow two canes to grow from each plant. In that case the Vines may be planted 5 feet 6 inches apart. The best Vines are those one year from the bud. You evidently have bought some fruiting canes; they would bear fruit during the ensuing summer, and could afterwards be cut-out, letting the others supply their place.

**NEGLECTED PEACH TREES (Idem).**—It would be most satisfactory to purchase young trees to plant on the wall of your orchard house.

**BRUISING BONES—DAPHNE REPOTTING (J. F. C.).**—We do not know of a better plan than to place them on a hard substance and crush them with a hammer. A bone mill is of course far preferable, but we do not know of a small inexpensive machine for crushing bones. It would be well to re-pot the *Daphne indica rubra*, removing any loose soil, or that which can be readily taken away without injury to the roots, and do not give a large shift. An 8-inch or 9-inch pot would not be too large for the size of plant you describe, unless you reduce the ball considerably, when it would be well to return it to the same sized pot, or one a trifle larger. As the plant has not flowered, you may pot it in March, or at once if it is beginning to grow. The *Cytisuses* and *Azaleas* should not be potted until after flowering, and then into a larger size of pot, merely removing any loose soil and loosening the sides of the ball. If young plants they may be potted in March.

**LOCHERIA MAGNIFICA (W. F. H.).**—*Locheria* is a sub-genus of *Achimenes*, and requires similar treatment—that is, to be duly supplied with moisture and heat whilst growing, keeping it rather dry after flowering, but not drying off as with other kinds.

**RUSSELLIA JUNCEA TREATMENT (Idem).**—Do not cut it down, but allow the shoots coming from the root to grow up, repotting now, and giving a compost of sandy peat and loam in equal parts, with a fourth part of leaf soil, a sixth of silver sand, and a few pieces of charcoal and good drainage. It requires to be grown in a stove, to be well supplied with water and moisture when making fresh growths, and when these are completed keep it from flagging and in a light airy position.

**FORMING BUSHY CINERARIAS (F. H.).**—To form bushy plants stop them at the third leaf when the stems are being thrown up. This will cause them

to branch, and the stopping may be again practised when the shoots resulting from the first stopping have made two leaves. This will make your plants very bushy, the shoots being regulated by neat stakes so as to form a compact head. It is now too late to stop your plants, but you may by timely attention have them bushy another season.

**ZONAL PELARGONIUM CULTURE (A. R.).**—Your plants ought now to be kept rather dry, but not so as to cause them to shrivel; and at the end of February they should be pruned, which we should confine to the shortening or cutting-out of irregular growths; and the branches ought to be pegged down or taken out so as to secure the breaking of the plant regularly. Place them in a light airy position, and keep them moderately moist. When the plants have broken turn them out of the pots, remove as much of the old soil as comes away without bringing off a great many of the roots, and return to the same size of pot as before. Shade from bright sun, and sprinkle overhead twice daily till they have recovered from the potting; water sparingly, only keeping the soil moist until the roots are working freely in the fresh soil, then water more freely, and expose fully to light and air, but shade from very bright sun for an hour in the hottest part of the day. When the pots are filled with roots, or early in May, the plants may be shifted into their blooming pots, after which they would be best grown in a cold pit, or light airy position in a cool house. Strong irregular growths may be stopped, but not after the middle of May, also any trusses of bloom as they show up to that time. Train the shoots out, so as to form a compact well-furnished specimen. Weak liquid manure may be applied, after the pots fill with roots, at every alternate watering.

**ESPALEER APPLE TREE WIRES (Welby).**—The distance of the wires or trainers apart should be 1 foot, the first being fixed 14 or 15 inches from the ground. Five or six wires will be a good height for espaliers.

**CAMELIAS FOR CONSERVATORY WALL (H. B.).**—Monarch and Mathotiana alba are not "trailing" Camellias, nor are there any that are of that habit, but they are free-growing kinds, and in a good border and when established make shoots of about a foot a year, sometimes less; so that a plant if planted quite young would be a number of years in reaching the top of a wall 4 yards high; but plants of a good size ready trained for walls may be had, or a one-sided large plant may be used for the purpose.

**THORN TREE GRAFTING (Alice).**—Cut-off the head when the buds are showing the green of the leaves, which will be some time in March or early in April, and after paring the sawn part smooth put in the scion by crown grafting; or we should, on such large arms, put in two scions by cleft, and other two on the same arm by crown grafting. If the grafts grow you will, of course, remove all the shoots arising from the stock; but if they do not, encourage three or four shoots, the strongest on each arm, and those you may bud in July; and if the buds do not take you can graft the shoots the following March, putting on the scions by tongue or whip grafting.

**MESEMBRYANTHEMUM CORDIFOLIUM VARIEGATUM SOWING (Idem).**—The seed should be sown in light sandy soil, which should be watered before sowing, allowed to stand for a few hours and again watered, and when settled sow the seed, covering it very lightly with fine soil or silver sand. Place in a cucumber frame or hotbed and near the glass, and when the seedlings appear remove at once to a light and airy position in the warm greenhouse; do not water overhead but through the spout of the watering-pot, pouring the water on a piece of crock or slate that may be placed in the pot amongst the seedlings. Very little water is required whilst they are young, or indeed at any state; all they require is to be kept from becoming limp. Pot-off singly when they are large enough to handle.

**PYRUS JAPONICA ROOT CUTTINGS (Idem).**—The cuttings of the roots ought to be put in now in light sandy soil in a warm situation, covering them about 2 inches deep, or they may be inserted in pots and placed in a gentle heat.

**CROTON VARIEGATUM CULTURE (Idem).**—It is a stove plant, but will succeed in a warm greenhouse, keeping rather dry in winter. Repot in spring when it begins to grow, removing any loose soil, and what can be picked from amongst the roots without injury to them, and repot in a size of pot that will admit of an inch of soil all around the ball, keeping the setting-on of the roots level with the rim of the pot. Equal parts fibrous peat and loam, with a fourth part leaf soil and a sixth part silver sand, a few nodules of charcoal, the whole well mixed, will grow this plant well, good drainage being given. Water freely during growth, and keep moist, and in winter keep rather dry, yet so moist as to maintain the foliage fresh. To have the foliage well coloured the plant should have a light position. In shade it is very badly coloured.

**POINCIANA REGIA CULTURE (H. G.).**—It will not succeed in a greenhouse, but requires a stove. It is not much cultivated in England, not being in any catalogue of plants that we remember. We do not know more than the species, and the variety to which you allude is probably the species *P. pulcherrima*, scarlet and yellow. *Ormosia coccinea* is not in cultivation in this country, neither of it nor of *Lithospermum* do we know where seeds may be obtained. It would not pay seedsmen to deal in plant seeds not generally in demand.

**POTATOES (G. W. Drake).**—They do not produce the wax moth. Sprig-planted Potatoes should be dug-up as soon as the leaves begin to turn yellow. Bone dust and sulphate of magnesia mixed are a good artificial manure for Potatoes.

**RESTIC SUMMER HOUSES (A Subscriber).**—Apply to Mr. Caven Fox, Royal Horticultural Society's Offices, South Kensington.

**INSECTS ON VINE SHOOTS (Amateur).**—The minute red insects assembled round the buds and base of the shoots of your Vines are, we regret to say, the *Acarus*, commonly called the red spider, so injurious in green and hot houses. You will observe that they have spun a little layer of silk, on which they are grouped. You must wash the Vines with a thick coating of lime, soft soap suds, soot, and some size or gummy material to make the mixture adhere to the shoots. This plan will also protect your trees from the Vine Oidium.—I. O. W.

**NAMING FRUITS (A. D., Preston, and others).**—Our best authority is abroad, when he returns all will be named.

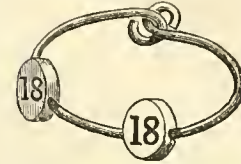
**NAMES OF PLANTS (G. W.).**—*Tussilago fragrans* (Sweet-scented Coltsfoot). Although a native of Italy, and deliciously scented, it was unnoticed by botanists until M. Villan, of Grenoble, was attracted to it by its perfume at the foot of Mount Pilat in Italy. It was introduced into England in 1806. (*J. Wilson*).—*Euonymus europæus*, the "Spindle Tree," and *Peziza coccinea*. (*Highfield*).—Your Orchid was unfortunately undeterminable. Can you send again? (*Elizabeth W.*).—*Spiraea arizifolia*. (*Sub.*).—1, *Gesnera elongata*, or a very close ally; 2, we cannot say; send when in flower; 3, Perhaps *Ancyllogyne*; when leaves and isolated flowers only are sent some indication of

mode of growth should be given. (*J. R.*).—*Lapageria rosea*. (*S. D.*).—*Bryum argenteum*. (*G. W.*).—*Gonista fragrans*. (*E. A. H. C.*).—*Chimonanthus fragrans*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### POULTRY-MARKER.

HAVING frequently seen inquiries made by your correspondents as to the best mode of marking poultry, I enclose you a marker of my own invention, which I have used all through the past season with entire satisfaction. It can be put on or taken



off with the greatest ease by using two pairs of ordinary round-pointed wire pliers. It is made by letting fall one or more drops of melted solder on to a piece of stoutish copper wire. The solder is then stamped with a number by means of a die, and a corresponding number entered in the poultry-book. The size and number of the drops of solder, and likewise the thickness of the copper

wire, can be varied at pleasure to suit the size of the chicken or fowl, and any ironmonger will furnish a set of number-dies of the requisite size at a trifling cost.

This plan may possibly be already known, but I have never seen anything at all like it, and as it has been most useful to me I wish to make it known to my brother fanciers through the medium of your columns. I may add that I prefer two drops of solder in case of the accidental defacing or loss of one.

I do not find my marker incommodes the birds in the least, nor does it chafe or injure the feathering or colour of the legs of Brahmas or Cochins.—WILLIAM SAYLIE, *Withersden Hall, Wye.*

### THE BRISTOL SHOW SEEN UNDER SUNLIGHT.

THE Bristol Poultry and Pigeon Show has now, somewhat like the city from which it takes its name, grown venerable. When a Committee have persevered amid great difficulties for eight years in endeavouring to maintain amongst them a first-class Show, they are entitled, like their birds, to be "highly commended." Shows—aye, many—have been started and come to an end since the first of the Bristol exhibitions, but that has gone on. Bad weather and Bristol Show time have almost always gone together. This is discouraging: still more is apathy shown to poultry matters by Bristolians in general—this is very unpardonable. The fine Rifle Drill Hall stands full in view on the highway between Bristol and Clifton; it is not hidden up in a corner. Every Bristol man of business who has his Clifton villa passes it, and he does keep, or ought to keep, poultry; but he does not enter the Show. Ladies in shoals bound for shopping expeditions sail by gorgeously appraised, and the spacious hall would admit them and not crush or damage their dresses; but they do not enter. Young ladies and young gentlemen on flirting expeditions pass by—very remiss in them; for at a show where the gangways and corners are many, flirting can be carried on, and surely sentiment can be suitably indulged in, and even proposals made, in the kindred and contagious atmosphere of a Pigeon Show. Young ladies and gentlemen, you who read this will, I am sure, be present next year. But jocularly apart, it is too bad that the Show should be so neglected by Bristolians. I would suggest that Canaries and other cage birds and talking birds be shown with the poultry next year: I think they would draw. I have a crow to pluck with the Hampshire breeders. They were very liberally dealt with, but did not give that support which they ought to have given. Still, with every deduction the Show was a first-class one—not quite so many pens as last year, but quality made up for quantity.

Friday, the opening day, was terribly wet and windy, and I could not face the weather, but waited in hope for a fine day on Saturday: nor was I disappointed. Sunlight the railway journey through; sunlight on the pretty country between Bath and Bristol; sunlight on the old houses in the narrow old streets of Bristol; sunlight on St. Mary Redcliffe, and that fine towered old church near Corn Street; sunlight on the Avon; sunlight on College Green and the old Cathedral; and bright sunlight outside the Rifle Drill Hall, and the inside lit up by the bright thin yellow sunlight that comes after rain. N.B.—A new town seems to me like a bit of the country spoiled, but an ancient historic place like Bristol is always, in all weathers, interesting. It has stood so long, and around it have clustered so many memories as a town, that its having been once country is quite forgotten. Thus it is that a city must be venerable in order to be interesting.

But to my immediate duty. In this corner yonder is class 1. *Dorkings*, Coloured (chickens).—Twenty cockerels made their appearance but excepting the first-prize none were noteworthy. The pullets were much better though fewer; first and cup excellent, and the other prize and highly commended and commended

birds worthy. Dorkings (Coloured) over one year.—Again the hens were the best in my opinion, though a cock took the cup. The first hens, Mr. Patton's, were pattern birds. Dorkings (Silver-Grey).—Only four cocks and only one prize awarded, but Mr. O. Creeswell's bird deserved what it got—a first; the rest nowhere. The hens again were the best. (N.B.—Why will not breeders keep up the beautiful Silver-Greys, birds far more beautiful but not so heavy as the Dark?)

*Cochins* (Cinnamon and Buff), chickens.—Cockerels, twenty-one, pullets but ten, but again the latter were the best. (N.B.—This is a day of lady-superiority evidently.) The first-prize cockerel, however, was every whit a Cochin; the third too small. First-prize pullets, handsome birds; second, the plumage too mottled; third, small but nicely feathered, but one comb was twisted. In pen 98, Miss Milward's, one of the pullets was a beauty. *Cochins* (Cinnamon and Buff), cocks, old.—These were among the best cocks of the Show. First and cup, Lady Gwydyr's, was no doubt the best Cochin in the whole Show. Second sold for six guineas, and very cheap. *Cochins* (Cinnamon and Buff), hens, old.—First one an excellent shape; second good shape but mottled plumage. *Cochins* (Brown and Partridge), any age.—Good classes both cocks and hens, but the latter the better; six pens were deservedly noticed out of the eleven. Next *Cochins* (White).—Both cocks and hens were a sight to delight a fancier. They are a greatly improved and improving class. Cocks—first-prize, lovely; second, good; third, hardly fit for his place, not so good a bird as No. 150, which, but that it is too yellow, is excellent as a Cochin. Pullets or hens—first, beautiful; second, better in comb than the first. No. 165, highly commended, very nice.

The *Dark Brahmas* were exceedingly numerous, so numerous that I own, as they were so nearly alike in excellence—great praise this—one almost wearied of them. Mr. L. Wright's cup pullets were, of course, very superior, but, indeed, all the *Dark Brahma* classes were wonderfully good. The *Light Brahmas*—fowls for use and ornament in grass-land in the country—were in the cocks good, but some weeds among them, and more among the hens. First and cup pullets very worthy. First and cup old cock stupendous in size.

*Spanish*.—Now these are the Bristol speciality, and claim, therefore, special notice. First, cockerels of 1873.—This entry was as good as any former year. First and cup, Mr. E. Jones, this bird has a lovely face, lying smooth in surface and rounded in form below; second not flat-faced enough to please me; third a better comb than first. No. 392, highly commended, but dry-tailed; No. 400, highly commended, not so good as No. 399 only commended; No. 407, rough cauliflower face. Pullets—very small entry and hardly up to the mark, but first and cup charming birds; second, one very good bird; third, middling only. 416, highly commended, one very good. *Spanish*, cocks, any age.—First, too rough a face; second, good and a beautiful comb. Hens, any age.—First, much the best; third was, I believe, the first last-year's pullet. No. 432 a fine old hen.

*Hamburgs* (Gold-spangled).—Few and good. There should have been more entries considering the encouragement offered. *Silver-spangled*, cocks.—First, an admirable bird, well shown; third, a very neat bird. The *Silver-spangled* hens, a very good class, all but one noticed. *Hamburgs* (Gold-pencilled).—More numerous. First, cock, first-rate. *Hamburgs*, cocks (Silver-pencilled).—Very few and poor. First prize withheld. Hens—better. *Black Hamburgs* pressing forward well. First, cock, just the thing. Hens—a good class; first, second, and third all good, and the highly commended good also. The *Black Hamburgs* are so much more *Hamburgs* and so much less *Spanish* than in earlier years.

In regard to the *Game*, which come next, there was some dissatisfaction among *Game* breeders, because the *Black-breasted Reds* and the *Brown-breasted* were shown in the same class, and this was felt the more as all three prizes went to *Brown Reds*. First and cup, a thorough good *Brown Red* cock; second, good; third, out of condition. Among *Game* pullets third was a good style and colour; second, a good hen. No. 563, Mr. Stag's highly commended, the best pullet in the Show, but hatched rather late. *Game* (Any other variety), cocks.—First, a good but odd-eyed *Duckwing* cock; third, a good Pile. On the whole the *Duckwings* not very good. *Game* (Any other variety), hens.—First and cup, a beautiful bird, almost faultless; second, *Duckwing*, better if longer, but colour good; third, a good Pile.

*Malays*.—Twenty-three entries in all. Cocks—first, a very large bird; third, remarkably good plumage. The hens were most liberally noticed by the Judges, but struck me as wanting in size, except the prize birds. The *Malays* are wonderfully like *Vultures* as one sees them in the pens, specially the hens. But this remarkable look points them out from all other fowls as a thoroughly distinct variety and one worth keeping up.

*Polish* (Any variety), cocks.—First, Golden; second, Silver; third, Black. Would there were more *Blacks*, as they are the original *Polish*, and after all, perhaps, the handsomest. Pen No. 647 contained a cock and hen by mistake, but very good.

*Polish* (Any variety), hens.—First, Golden and good; second, a good Silver.

*French* fowls appear, by their number, to have a good hold on the public favour.

Any other distinct variety, cocks.—First, a good *Black Cochin* cock, and truly glad was I to see him. There were *Sultans*, *Leghorns*, *Andalusians*, *Frieslands*, *White Dorkings*, &c., and very good and interesting almost all of them. Among the hens the first prize went to an excellent pair of *Black Cochins*. The whole class was a good one. Everyone noticed the hybrid *Pheasant* and *Brahma*, No. 726. The *Pheasant* was most visible in the bird, but the booted legs proclaimed the *Brahma* cross.

Among the *Ducks* the *Rouen* were particularly good; and in the little *East Indians*, which were a capital lot, Mr. Sainsbury's were first. There were also *Mandarins* and *Carolinas*, the prettiest of the pretty.

*Geese* and *Turkeys*.—Very few.

*Game Bantams* (*Black-breasted* and other *Reds*).—Not so numerous as usual. A *Brown Red* took third prize. *Game Bantams* (Any other variety).—First and cup, the hen rather large; third, a very excellent pen—the whole class a good one. *Black Bantams*.—First and cup, cock rather large; the second I preferred to the first; third, Mr. Cambridge's, were good. Indeed the little *Blacks* were a good lot, and I was pleased to see, as an old *Black Bantam* breeder, that they were numerous. The *Sebrights* are, in regard to the Silver, improving. The breeding *Gold* and *Silver* together made the latter so cream-coloured that the real *Silver* were seldom seen—now it is different. First and cup, beautiful *Gold*; second, good *Silver*. No. 834, commended, were nice and silvery in colour. I have good hope that we shall see again the delicate and beautifully coloured *Silver Sebright* in perfection. *White Bantams* were a little and poor class, and the first prize properly withheld. *Game Bantams* (Any variety, any age), cock birds, were on the other hand somewhat numerous and decidedly good, more than half of them being noticed in one way or the other. The first and cup bird was what a *Game Bantam* should be; second and third were also good, but not quite worth the price asked by the owner—£1000! I had hoped never again to see these ludicrous figures. £50 is more within the region of common sense, and would suffice to prevent a sale.

#### THE PIGEONS.

*Carriers*, cocks (*Black* or *Dun*, any age).—Ten entries, and many very good birds. Seldom have I seen a better class, or a larger proportion of superior birds to the number of entries. *Hen Carriers* of the same age and colours were also good. Some were chiefly wanting in age—no cause of regret, as their prize time is coming. *Blue Carriers* were again very good, which is saying a great deal; but it was hardly wise to offer prizes for *Whites*. There were three entries, and only one bird at all *Carrier-like*.

*Pouters*.—Among the cocks was a capital *Black*, which took the cup. N.B.—*Pouters* are getting more numerous at provincial shows. Glasgow influenced the *Crystal Palace*, and the *Palace* influences all other English shows. *Blue*, *Black*, and *Yellow*, in the order written, took prizes among the hens, the last a nice sprightly bird. I much long to see more and better *Yellows* at our English shows; we want some *Dundee* birds to come south.

The *Almond Tumblers* were very few, but sure to win. Hardly more in number were the other *Short-faces*, but as good. First-prize, a *Black Mottle*; second, a beautiful *Red*; one, and only one, *Bald*!

The foreign *Owls* were lovely; the English *Owls* very foreign-like. There were Mr. Fulton's grand-skulled *Barbs*, and three good *Trumpeters*; of *Jacobins* a respectable number and of respectable quality. The same may be said of the *Fantails*. The *Turbits* were still more numerous. The *Nuns* again were but few, while the *Dragoons* of all colours were quite a show. This is what I like to see—not merely three or four birds sure to win, but a large number of rising birds from rising fanciers. Such classes show spirit in fanciers. I like also to see that a fancier far away from London, like Mr. Bishop, of Dorchester, can take to a class and win against great names, even against the dressed "Bob." I should like to see other fanciers as spirited, and not "cowed," as some are, by such exhibitors as Messrs. Fulton and Yardley. It is not like English pluck to act thus, and it would be more English-like to persevere. Here was Mr. Bishop ahead, and far ahead, though little "Bob's" good old blood-red *Dragoon* fairly got a second. I want again to see, as at the *Palace*, some good old grizzle *Dragoons*.

*Antwerps*, *Short* and *Long-faced*, were strong classes. The Any other variety class was not as numerous as usual. This is a class in which lady fanciers might well compete, as they are specially fond of the pretty-feathered varieties.

Having now gone through all the classes of poultry and Pigeons I have only to say that good arrangement was the rule, as always at Bristol. There was Mr. Roné hard at work in his secretary's office, looking energetic even under the depressing influences of bad weather and too little support. There was Mr. Cambridge ready as ever to render assistance to me. Dear old Bristol!

after all the grandest historic place in the west of England, its show ought to be continued and ought to pay. A late lunch with a brother fancier at the Show (a brother parson too), and then a stroll stationwards. A pause, as always, at glorious St. Mary Redcliffe, now fully restored—where, indeed, I sat in one of the chairs at the extreme end of the building, and was lost in a dream-like reverie. The sun, shining through the reddish-tinted chancel windows, cast a rosy light over that part of the grand old church; while the pearly-white reredos below, upon which no rosy light fell, looked at the great distance like lace-work wrought by feminine fingers; and arch and painted window beyond, and arch and painted window still further beyond, made the church a very lengthened avenue of stone. I glance up at the muniment room and think of Chatterton, "the Marvellous Boy." I go out and look at his statue. I go on and am at the station. Bristol, thou art dirty, 'tis true—"pity 'tis, 'tis true;" but then thou hast a history. Thou art no mere mushroom manufacturing place.—WILTSHIRE RECTOR.

### KENDAL POULTRY SHOW.

This was held in the Albert Buildings on the 22nd inst. and following two days. There were nearly 600 entries. Subjoined is the list of awards:—

GEES.—1, J. Walker, Rochdale. 2, Capt. L. Anyon, Chorley. c, R. W. Simpson, Kendal.

TURKEYS.—1, J. Walker. 2, T. E. Rawson, Thorpe, Halifax. *hc*, J. Thompson, Nailand Mill Beck, Kendal. 3, F. Statler, Carlisle. 4, Mrs. Kauthmell. 5, D. B. Ross, Kendal. 6, J. Walker. 7, 2, R. Gladstone, Ind. Broad. Green, Liverpool. *hc*, W. Evans, Prescott; J. Addison, Kendal. *Aylesbury*.—Cup and 2, J. Walker. 3, T. P. Carver, Langthorpe. *hc*, Mrs. Wootton, Mapperley. *Black East Indian*.—1, J. Walker. 2, G. S. Sainsbury, Devizes. 3, Mrs. Wootton. *Any other variety*.—1 and 3, H. B. Smith, Broughton, Preston. 2, J. Walker. *hc*, H. B. Smith; M. Leno, Markyate Street.

DOORINGS.—Coloured, except Silver-Grey.—Cock.—1 and 3, J. Walker. 2, D. G. Bate, Merton. *hc*, J. Hartley, Windermer. W. W. Rutledge, Kendal; Mrs. Hurd, Kendal. *Hens*.—1, D. Gellatly. 2, L. Pilkington, Widnes. 3, W. Copple, Prescott. *hc*, J. Walker; J. White, Warlaby.

DOORINGS.—Silver-Grey, or any other variety. —Cock.—Cup, T. Raines, Bridgehangh, Stirling. 2, W. W. Rutledge. 3, J. Cunningham, Tarbrough, Dalbeattie. *Hens*.—1, Hon. Mrs. Howard, Milnthorpe. 2, J. Cunningham, 3, W. W. Rutledge. *hc*, Hon. Mrs. Howard; R. Smalley, Lancaster.

SPANISH.—Black.—Cock.—1 and 2, H. Lacy, Hebden Bridge. 3, W. Swann, Hurst Head, Beedington. *hc*, H. Longland, Kendal. *Hens*.—1, H. Lacy. 2, T. F. Ansell, Cowley Mount, St. Helen's. 3, H. Wilkinson, Earby, Skipton. *hc*, C. J. Myers, Broughton-in-Furness.

COCHIN-CHINA.—Cock.—1, W. Cartmel. 2, T. Stretch, Ormskirk. 3, H. Lacy. *hc*, J. O. Rigge, Ulverstone. *Hens*.—Cup, H. Lacy. 2, G. H. Procter, Durham. 3, W. Cartmel.

FENCU.—*Grise-Creux, Houdans, or La Fleche*.—1, R. B. Wood, Uttoxeter. 2, C. J. Myers. 3, W. Jackson, Bolton-le-Moors.

GAME.—Black Red.—Cock.—Cup, J. Fletcher, Stoneclogh. 1, J. Brough, Carlisle. 3, D. Harley, Edinburgh. *hc*, T. E. Satterthwaite, Castle Howard. *Cockerel*.—1, T. Mason, Lancaster. 2, D. Harley. 3, J. Fletcher. *hc*, T. E. Satterthwaite. c, H. Sharpe, Bebside. *Hens*.—1, N. J. Pope, Biggleswade. 2, J. Fletcher. 3, C. H. Wolff, Altrincham.

GAME.—Brown-breasted Red.—Cock.—1, Miss M. J. Nelson, Cockshaw, Hexham. 2, C. W. Brierley, Middleton, Manchester. 3, J. Fletcher. *hc*, G. Sutton, Bootham. *Cockerel*.—1, W. Higgin, Ulverston. 2, D. Harley. 3, T. Burgess, Burleyd-m, Whitechurch. *hc*, C. W. Brierley. *Hens*.—1, C. W. Brierley. 2, E. and F. Fewick, Kirkby Lonsdale. 3 and *hc*, W. Boulton, Furness Abbey.

GAME.—Any other variety.—Cock.—1, C. W. Brierley. 2, F. Sales, Crowle. 3, H. H. Staveley, Driffield. *Hens*.—1, C. H. Wolff. 2, C. Travis, Ithurgoland, Sheffield. 3, F. Sales. *hc*, E. Aykroyd; E. Woodburn, Ulverston.

SPANISH.—Black.—1, H. Wilkinson. 2, T. J. Harrison, Kendal. 3, O. Thompson, Kendal.

HAMBURGERS.—Golden-spangled.—Cup and 2, G. & J. Duckworth, Church. 3, H. Beldou, Goltstock, Bungley. *hc*, W. A. Hyde, Ashton-under-Lyne; J. Buckley, Taunton, Ashton-under-Lyne. *Silver-spangled*.—1, J. Fielding. 2, Ashton and Booth, Mottram. 3, H. Beldou. *hc*, W. R. Park, Melrose.

HAMBOURGERS.—Golden-pencilled.—1, H. Beldou. 2, R. Dickson, Selkirk. 3, J. Anderson, Gilkead. *hc*, E. and W. Fewick; R. Dickson. *Silver-pencilled*.—1, W. H. Maud, Kendal. 2, H. Beldou. 3, J. Robinson, Garstang.

ANY OTHER VARIETY EXCEPT BANTAMS.—1 and 2, H. Beldou. 3, J. Robinson. *hc*, G. E. Sawdow, Sutton Cross Hill.

SELLING CLASSES.—1, T. H. Hine, Kendal (Cochins). 2, D. Monlaon, Bradford. 3, G. C. Wilson, Dalham Tower, Milnthorpe. 4, T. J. Harrison (Buff Cochins). 5, J. Fawcett, Wolverhampton (Roena). *hc*, J. Walker; W. Cartmel (Rouens); E. Kemp, Milnthorpe (2); M. Redhead, Kendal (Rouens); E. Robinson, Howkell (Rouens); W. Jackson (Grey Dorkings); Mrs. Glessall, Kirkby Lonsdale (Cochins). 6, Bethel, Sedgewick; E. Pearson, Whitehaven.

GAME BANTAMS.—Black-breasted and other Bants.—Cock.—1, J. R. Fletcher, Stoneclogh. 2, J. Winkill, Hurside. 3, E. Fearon. *hc*, Miss M. J. Nelson (2); W. F. Addie, Preston (2). *Hens*.—Cup and 2, T. Sharplea. 3, W. F. Addie. *hc*, J. R. Fletcher.

GAME BANTAMS.—Any other variety.—Cock.—1, J. R. Fletcher. 2, W. Murray, Hexham. 3, W. F. Addie. *hc*, T. Sharplea, Ravenstail; H. Sharpe. *Hens*.—1, J. R. Fletcher. 2, G. W. Teedale, Ulverstone. 3, W. Murray. *hc*, J. Winkill.

BANTAMS.—Other than Game.—Black.—1, W. H. Robinson. 2, J. Walker. 3, W. Moore, Keighley. *hc*, W. H. Shackleton, Bradford; A. Jackson. *Any other variety*.—1, J. Mayo. 2, J. Waller, Kendal. 3, H. Beldou. *hc*, M. Leno; E. Walton.

#### LOCAL CLASSES.

DOORINGS.—Chickens.—Cup and 2, Mrs. Hind. 3 and *hc*, W. Rutledge. *vhc*, A. W. Rothwath. c, J. Moser, Kendal.

BRAMA POOTRA.—Chickens.—1, G. Cartmel. 2, G. W. Brummwell, Kendal. 3, G. Bethel.

COCHIN-CHINA.—Chickens.—1, J. Hine. 2, G. Cartmel. 3, Mrs. Glessall. *hc*, T. J. Harrison; J. N. Stainton, Milnthorpe; Mrs. Glessall; J. Hine.

GAME.—Cockerel.—1, J. Barrow, Kendal. 2, T. Cartmel. 3, M. & J. Graham, Kendal. *hc*, J. Barrow, Kendal. *Pullet*.—1, J. Kauthmell. 2, G. C. Wilson. 3, T. Cartmel. *hc*, J. Kauthmell; G. C. Wilson.

GAME.—Brown-breasted.—1, 2, and 3, G. C. Wilson.

SPANISH.—Black.—Chickens.—1 and 2, T. J. Harrison. 3 and *hc*, C. R. Kay.

HAMBOURGERS.—Chickens.—1 and 2, T. Stuart, Staveley. 3, C. Ker-shaw. *hc*, J. Roberts, Holme.

DUCKINGS.—Cup, G. Cartmel. 2, J. J. Waller. 3, W. Cartmell.

BANTAMS.—Chickens.—1, W. Atkinson, Kendal. 2, J. Winkill. 3, Mrs. Laycock. *hc*, Mrs. Winkill; B. Davis; T. E. Thompson, Lound.

#### PIGEONS.

CARRIER.—Single.—Plate, J. Thompson, Bingley. 2, H. Yardley, Birmingham. *hc*, E. C. Stretch; J. & W. Towerson, Egremont.

POUTER OR CROPPER.—Single.—1, R. Blacklock, Sunderland. 2, J. & W. Towerson. *hc*, W. Jackson; J. Davy, Edinburgh.

ANTWERP.—1, W. Gamon, Cheater. 2, C. F. Copeman, Birmingham. *hc*, H. Yardley; W. Gamon. c, J. Wilson, Rigmaden.

TUMBLERS.—1, J. Fielding, juv. 2, H. Yardley.

OWLS.—1 and *hc*, T. W. Townson, Bowdon. 2, W. Lumb, Rochdale.

BAUBS.—1, J. Stanley, Blackburn. 2, H. Yardley. *hc*, W. Jackson.

FANTAILS.—1, T. W. Townson. 2, J. F. Loversidge, Newark. *hc*, W. Lumb, Rochdale.

TURBATS.—1, T. W. Townson. 2, J. Wilson. *hc*, A. Silvester; J. & W. Tower-

TRUMPETERS.—1, R. J. Smith, Yarm-on-Tees. 2, H. Yardley. *hc*, W. McClive, Ayr.

JACOBINS.—1, W. Lumb. 2, J. Thompson. *hc*, J. Thompson; J. & W. Tower-

son.

ANY OTHER VARIETY.—1 and 2, A. Silvester. *hc*, W. Lumb; J. H. Hedley; J. and W. Towerson.

JUDGES.—Mr. R. Teebay, and Mr. J. Douglass.

### DORKING POULTRY SHOW.

It has not often, if ever before this year, been my fate to be in the neighbourhood of Dorking at the time of the poultry Show. When, then, the opportunity offered, I thought I would at all events make an effort to attend, for at Dorking you of course expect to see something corresponding to and worthy of the name. As the Show is not a new one, and in the centre of the district which is supposed to supply London with the best table fowls, I was inclined to hope for great things; but before the day was over I was reminded more than once of the saying which is said to be somewhere, though where I am not quite prepared to say—"Blessed are they that expect little, for they shall not be disappointed."

Looking at the schedule to ascertain when the Show would be open, I was unable to ascertain the point, nor could I see anything about the price of admission. A friend, however, on the spot, wrote me word that he thought it would be open at nine o'clock on the 22nd. I thought, therefore, I should be in time if I were there on that morning; but on inquiry learnt that some fortunate individuals had been admitted on the previous (Wednesday) evening. Allow me to suggest to the Committee that a definite hour for opening and a definite rule as to admission would be advisable in every way. Moreover, no time was fixed for claiming birds, so some claimed on Wednesday evening, to the chagrin of those who thought they were in time on Thursday morning. It is only right to say that when a complaint on this score was made, the Secretary at once endeavoured to do justice to all parties in the most obliging way. Still, it would be better if some time were allowed to elapse after the commencement of the Show before birds could be claimed, so that parties admitted to a private view or who have been able to attend at the opening of the Show may not have so great an advantage over others not equally favoured by fortune.

Starting almost before daylight on a cold and misty morning, I fear that I rather alarmed my friends, who seemed to think me a trifle crazed thus to venture forth for the sake of a few fowls; but as all men are said to be mad on some point, I am willing to plead guilty in this respect, and at the same time to acknowledge that my feathered friends have added greatly to the enjoyment of life, as well as lessened the wear and tear of a harassing occupation.

"*Dulce est desipere in loco*," says the Roman whom we all acknowledge as one of the most worldly-wise of men, and behind this saying I am content to entrench myself. The train passing between hills, which in summer must afford some charming views, brought me to my destination almost before the Dorking world was awake. When, however, I entered the Show, which, by-the-by, is held in the Town Hall, a new and fairly commodious building, I found that I was not quite so early as I supposed—some folks were already there, and all the birds which I should have cared to claim were "sold." My first impression on entering was that the pens all looked overcrowded. The Committee at Dorking are evidently fond of the old-fashioned plan of making up a pen with a cock and two hens—in fact, no less than twenty classes required three birds to be entered in one pen. The effect upon the Show in my opinion was injurious. It is often easy to select one good cock and one good hen, but to choose two good hens that match, together with a first-rate cock, is a different matter. Thus many of the pens had one bird with a palpable defect; and in class 17 (Blue-speckled cockerel and two pullets) the feet of the birds were particularly defective. Nor indeed can birds be seen to advantage when crowded; and as the wire pens at Dorking were of the usual size, while large enough for a pair, they were scarcely equal to the requirements of a trio.

My next impression in going round the Show was that it was scarcely up to the standard that might have been expected. I have carried off honours myself there in former years, and know that they were won in large fields and after a hard fight; but the contest even in the open classes this year did not seem severe. Perhaps, as I am older and possibly wiser, my criterion of excellence may be a higher one. However that may be, I am assured the Show is not what it has been. The cause, to my mind, is obvious. If committees fix their shows near the end

of January, they must not expect fanciers who care for breeding as well as winning to send their birds. The Show is altogether too late—much later than it used to be, or, indeed, need be. It is true the number of shows in December—the month in which the Show was formerly held—is very great; but there are not many shows at the end of December, and this is the time I would suggest for the Dorking Show. The prizes at Dorking in the open classes are as good—I believe, indeed, that they are better, than those at Manchester. Let the latter attract the northern fanciers, while Dorking could bring together the best birds in the south. Manchester, too, lasts nearly a week, Dorking two days only. I need not dwell on the difference this would make in the choice between the two. The entries amounted to nearly three hundred, divided among thirty-two classes; of these five were “open to all England,” as the bills on the walls were careful to inform us. Four classes contained thirty-one entries, the Selling class thirteen more.

In class 1 (*Dorking* cock and two hens) Mr. Greenhill won the cup with a pen rightly described as “aged.” A grizzled breast and a tail “turning grey” rather marred the appearance of the cock, while the hens have evidently seen their best days. Mr. Ellis, a local exhibitor, won the cup in class 2 (cockerel and two pullets.) The pullets were fair, but the critical declared the cockerel had a wry tail. I did not think so. The cockerels (class 3) were poor, the first-prize bird being good in colour, but of no size. The pullets were also moderate in quality, Col. Lane’s prize pen being but small, though good in colour. The open Selling class contained a good pair of hens, which won the first prize, and were successfully carried off at once by an energetic fancier, who soon saw their worth.

I must not occupy your space by going through all the classes, some of which were good, some decidedly poor. The Local classes for cock and two hens as well as for cockerel and two pullets were not worth much. Mr. Clift, however, showed a pair of excellent hens, and Mr. Ellis a very fair Dark cockerel. The White Dorkings were very poor, some of them not much bigger than Hamburgs. Mr. Cubitt showed one good pen, and Lady Mary Legge would have won a prize had her man not left a ring or mark round the leg of one of her birds. There were large entries of Blue-speckled Dorkings, many of which, however, were bad in colour and in feet. There are few more handsome or prettier birds, to my mind, than the Blue-speckled Dorkings; and I must own to some disappointment in not seeing more true and good-coloured birds. Mr. Griffin’s pullets (class 19) were the best coloured birds, as far as I could judge, and very handsome they were.

The last of the twenty Dorking classes had twenty-one entries (sixty-three birds) to compete for four prizes, given by Mr. Clift to local exhibitors who had never won a prize. They contained some very fair birds. The remaining classes were made-up of other varieties, most of them quite moderate in quality. In *Brahmas* I expected to find Mr. Pares first, but his cockerel had a tail which was almost large enough for a Dorking. In *Bantams* a pretty pair of Japanese was first. The largest *Aylesbury Ducks* had bad-coloured bills, and so were distanced. In *Geese* the prize birds were not true-bred, so that the competition could not have been very severe.

I looked in vain for a class of those lovely birds—the Silver-Greys. Is there a more handsome fowl to be found than a good Silver-Gray cock with his black breast, black tail, and silver-white hackle? I think not, and so was sorry to miss the class. I am told, however, that the difficulty of breeding these birds is greater than ever; that the hens must now be so light in colour that you cannot breed good cocks in the same yard. I know not whether this be true or not; it is, however, to be hoped that the judges will not improve this variety out of our shows, as they seem to have done the Spanish. I have an idea in my head (it may be a delusion), that the Spanish fowl has been almost ruined for practical purposes by the standard set-up at our exhibitions. It is to be hoped that the Silver-Greys may escape a similar fate.

One of our new judges, Mr. M. Leno, awarded the prizes, and seemed to give general satisfaction. An exhibitor of Dorkings, who has won as many cups and prizes as anyone in his time, assured me that he had been carefully through the classes, and could not put his hand on a single mistake.—A DORKING FANCIER.

**DORKINGS.—Coloured.**—Cnp, G. W. Greenhill. 2, Lient-Col. Lane. 3, Ivory and Son. *hc*, F. May; E. & A. Stanford. *Chickens*.—Cup, G. Ellis. 2, R. Chessman. 3, G. W. Greenhill.

**DORKINGS.—Coloured.—Cockerel.**—1, W. J. Russell. 2, G. Ellis. *Pullets*.—1, Lient-Col. Lane. 2, J. H. Putney.

**DORKINGS.—Coloured.—Selling Class.**—1, G. Ellis. 2 and 3, H. Humphrey. *hc*, G. W. Greenhill.

**DORKINGS.—Coloured.**—1, J. R. Corbett. 2, F. May. 3, E. May. *Chickens*.—1, G. Ellis. 2, G. Hine. 3, J. H. Putney. *hc*, H. Mills.

**DORKINGS.—Coloured.—Cock.**—1, H. H. Young. 2, E. T. Bennett. *Cockerel*.—1, G. Ellis. 2, F. May. *hc*, H. Mills; J. H. Putney. *c*, G. Hine; H. Mills.

**DORKINGS.—Coloured.—Hens.**—1, J. Clift. 2, T. H. Perks. *hc*, H. Mills. *c*, R. Bowshell; Ivory & Son; J. H. Putney. *Pullets*.—1, J. Clift. 2, J. H. Putney. *hc*, H. Mills. *c*, T. Hoad.

**DORKINGS.—White.**—1, G. Cubitt. 2, C. Maw. 3, Withield. *Chickens*.—1, W. F. Watson. 2, Lady M. Legge. 3, G. Cubitt.

**DORKINGS.—White.—Cock.**—1, G. Cubitt. *Hens or Pullets*.—Prize, C. Maw.

**DORKINGS.—Blue-speckled.**—1, Virgo & Son. 2, J. L. Playfoot. *S. H. H. Young. Chickens*.—1, J. Wood. 2, R. Pittard. 3, H. H. Young. *hc*, J. L. Playfoot.

**DORKINGS.—Blue-speckled.—Cock.**—Prize, Mrs. E. M. Lamb. *Hens or Pullets*.—Prize, W. Griffin. *hc*, Virgo & Son.

**DORKINGS.—Given by Mr. Clift to all persons who have never won a prize.**—1, J. Morley. 2, J. Hammond. 3, G. Peacock. 4, Mrs. E. Chandler. *hc*, G. Yorke.

*c*, J. Atkinson; C. Dobson; J. Warren.

**BRAHMAS.**—Prize, J. Mew. *hc*, J. Pares.

**SPANISH.**—Prize, P. Roffey.

**GAME.**—Prize, J. Mew.

**BANTAMS.**—Prize, J. E. Bovill. *hc*, J. Mew.

**HAMBURGH.**—Prize, J. W. Trowbridge. *Silver*.—Prize, Mrs. Trowbridge.

**DUCKS.—White Aylesbury.**—1, W. F. Watson. 2, A. Fuller. *Any other breed*.

—1, J. R. Corbett. 2, Virgo & Son.

**GESE.**—1, A. Batchelar. 2, W. F. Watson. *Goslings*.—1, W. F. Watson. 2, J. D. Taylor.

**TURKEYS.**—1, A. Fuller. 2, C. Dobson.

## LOWESTOFT POULTRY AND PIGEON SHOW.

With a knot of true fanciers as the Committee of Management the regulations are sure to give satisfaction, and the Show held at Lowestoft on the 21st and 22nd inst. proved this. The poultry while in the hands of the Society received the greatest care and attention, while the catalogue and awards were printed and dispatched by the same evening’s post—a regulation which, more than any other, gives satisfaction to the anxious exhibitors. The Show was held in the Drill Hall, the pens being the property of the Committee, and of a most substantial kind; those for poultry were placed in double tiers, with the Pigeons in the centre of the room on the top of the poultry.

Of *Dorkings* the winners were Dark Grey. The first were in splendid bloom, the second being very large and dark, but broken-feathered, and somewhat out of condition; the third were good, but young. In *Cochins* Lady Gwydyr had an easy victory for the cup with a capital pair of Buffs, the remainder being also of good quality. In the next class Whites stood first, and Partridge second. *Brahmas* were not numerous, but some good birds competed in both classes, a grand pair of Darks winning the cup; the hen in this pen was the best pencilled bird we have ever seen. *Game* (Red) was a good class, Brown Reds taking the cup and prizes; the Duckwings in the Variety class proved especially good in colour. *Spanish* were very good, the cup pair being a well-shown pair of chickens. *Hamburgs*.—Gold-pencils won the cup against the Silvers; the winners in both classes being very good; the first-named pen were birds of 1872. Some very good Gold-spangles were shown, the hens being especially clear in colour and marking; but the cup was carried off in the next class with a capital pair of Silvers. *French* varieties showed-up pretty well, Crève-Cœur winning all the prizes. In the Variety class a good pair of Black Hamburgs won the cup against the French fowls; the second in this class being Golden Polands, and third Sultans. Next came two very large Selling classes, in which were some cheap birds very readily sold. *Bantams*, Red Game, were a fair lot; the winners very good, and the cup for the section awarded there. In the next class Piles stood first and third, with Duckwings second. *Bantams*, Black, were a grand lot; the first a most perfect pair, winning also the cup against the Sebrights, which were, however, very good; the pullets in the Golden variety were most exquisitely marked, the second-prize pen being a grand pair of pure Silvers. Some good Booted Bantams were shown, but few were matched in leg. *Ducks*, Aylesbury, good, but Rouens better; those in the Variety class being Kasarka, Mandarin, and Carolina. Next came the Hon. Secretary’s birds, which were not shown for competition, and comprised some excellent Dark Brahmas and Carrier Pigeons.

*Pigeons* came next, and the entries in most of the classes very good; the Carriers in all cases being a grand display; the cup for the first seven classes was awarded to a grand Black cock. Pouters not numerous, but good, and all Whites. Barbs in both classes only of moderate quality; but the Bald and Beard Tumblers a good class, the first being Blue Beards, second Red Balde of the Short-faced kind, and third Long-faced Blue Balde. Almonds only four entries, the winners, especially the first, very good in head properties; and Fantails one of the best classes seen of late, the prizes as usual going to Newark. Dragons were all named with one exception, some most perfect birds coming to the front, and the cup for the second half awarded to a grand pair of Blues; second very sound-coloured Yellows, and third Reds. Antwerps were, first and third, Red-chequers, and second Silver Duns, the first and second being Short, and the third Long-faced birds. In the Variety class there were many nice pens of the fancy kinds, but the first was awarded to a grand pair of Silver English Owls, the second to Pigmy Pouters. The local element, for which provision of two prizes in each class is made, was very strong, showing the greatest improvement upon previous years, and some birds held their own against all comers, and carried off several of the principal prizes. We are glad to be able to state that the number of empty pens was far smaller than heretofore.

**DORKINGS.**—1 and Cup, F. Parlett, Great Baddow, Chelmsford. 1 Local, A. S. Clarke, Lowestoft. 2, Henry Lingwood, Barking, Neadham Market. 3, E. W. Southwood, Fakenham. *hc*, T. & H. Heath; A. S. Clarke; Henry Lingwood.

**COCHINS.**—*Cinnamon* of Buff.—1 and Cup, Lady Gwydyr, Ipswich. 2, Major C. S. Bignold, Norwich. 2 Local, W. P. Matthews, Gorleston. 3, W. Saunders, Lowestoft. c, J. Watson. *Any other variety*.—1, R. S. S. Woodgate, Pembury, Tonbridge Wells. 2, T. M. Derry, Geaney. 2 Local, W. Haward, Lowestoft. 3, T. L. Nash, Spronghton, Ipswich. *hc*, Lady Gwydyr.

**BRAHMAS.**—*Dark*.—1 and Cup, Horace Lingwood, Creeting, Needham Market. 1 Local and *hc*, H. W. Thirle, Lowestoft. c, G. S. Pearson, Yarmouth. 2 Local, W. P. Matthews, c, J. Wright, Lowestoft. c, W. Branton. *Light*.—1, P. Haines, Plafgrave, Diss. 2, Horace Lingwood. 3 and *hc*, H. Watson, Cringleford, Norwich.

**GAME.**—*Black and other Reds*.—1 and Cup, S. Matthew, Stowmarket. 1 Local, W. Major. 2, H. E. Martin, Southorpe, Fakenham. 2 Local, C. Clarke. 3, C. Page, Lowestoft. *hc*, S. J. F. Stafford. c, M. Pith. *Any other variety*.—1, S. Matthew. 2, J. W. Fitch, Romford. 3, H. E. Martin.

**SPANGLED.**—1 and Cup, R. N. White, Epworth. 1 Local and *vhc*, W. Carter, Lowestoft. 2, F. James, Peckham Rye. 2 Local, W. White, Lowestoft. 3, E. Saunders. *hc*, Major C. J. Ewen; W. Cropley. c, W. White; W. Cropley.

**HAMBORNS.**—*Golden-pencilled*.—1 and Cup, J. Webster. 1 Local, A. Smith, Lowestoft. 2, C. N. J. Row, Melford. 2 Local, T. Swatman, jun., Lowestoft. 3, G. & J. Duckworth, Church. *vhc*, W. Speakman. *hc*, J. Robinson. *Silver-pencilled*.—1, J. Webster. 2, J. Robinson. 3, H. & A. Gill, Rawtenstall.

**HAZARDUS.**—*Gold-spangled*.—1, G. & J. Duckworth. 1 Local and *hc*, Page and Reynolds. *Light*.—1, W. A. Hyde, Hurst, Ashton-under-Lyne. 2 Local, J. Miles, Lowestoft. 3, J. Robinson. *Silver-spangled*.—1 and Cup, Ashton and Booth, Mottram, Manchester. 1 Local and 2 Local, J. B. Bly, Lowestoft. 2, J. Robinson, Garstang. 3, J. Webster. *hc*, E. Hills; H. R. Flatten, jun.; J. B. Bly. c, S. Booth.

**FRENCH.**—1, J. J. Malden, Biggleswade. 1 Local, J. Wright. 2, W. Outlack, jun., Littleport, Ely. 2 Local, Miss E. Smith, Carlton Colville. 3, Miss J. Local, Fakenham. *hc*, G. W. Cropper. J. Robinson. c, — Boulton.

**ANY OTHER VARIETY.**—1 and Cup, T. A. Wright, Yarmouth (Black Hamburgs). 1 Local, A. Smith (Andalusians). 2, G. W. Boothby (Polands). 2 Local, S. Norton (Andalusians). 3, Miss E. A. Eeles, Southwold (Sultans). *vhc*, T. L. Nash (Silkies). *hc*, W. Outlack, jun. (Black Hamburgs); J. M. Atkinson (Polands); H. P. Jellicoe (Polands); Lady Gwydyr. c, A. Smith (Andalusians); S. Norton (Andalusians).

**CLAY.**—1 and Cup, W. B. Bly, Bly (Spanish). 1 Local, H. W. Thirle (Brahma). 2, Lady Gwydyr. 2 Local, W. White (Spanish). 3, F. Parlett (Dorking). *vhc*, H. Dowsett (Brahma). *hc*, P. Haines (Brahma); H. W. Thirle (Brahma); W. Branton (Buff Cochins); T. M. Derry (Buff Cochins); Major Bignold (White Cochins); W. Saunders (Spanish); W. White (Spanish); H. P. Jellicoe (Golden Polands); A. Bentley (Black Bantam). c, Rev. S. Philip (Brahma); J. Hill, Brentwood (Brahma); J. S. Pearson (Buff Cochins); Rev. W. F. Dixon (Buff Cochins); E. Saunders (Spanish); J. Keeble, Herringfleet (Spanish). c, Butcher, Lowestoft (Montevideo).

**SELLING CLASS.**—*Hens*.—1, J. B. Bly (Hamburgs). 1 Local and *vhc*, W. White (Spanish). 2, Lady Gwydyr. 2 Local, Mrs. Saunders, Lowestoft (Buff Cochins). 3, W. Burrows, Diss (Brahma). *hc*, H. Dowsett (Brahma); T. L. Nash (Brahma); W. Burrows; Miss Waite, Yarmouth (Dorking and Game); E. Saunders (Spanish). c, J. Watson (Buff Cochins); T. L. Nash (Buff Cochins); Mrs. Saunders (Buff Cochins); Capps & Beckett, Lowestoft (Silkies).

**ANY OTHER VARIETY.**—1 Local and Cup, W. E. Newitt, Epworth. 1 Local, W. Robbins, Lowestoft. 2, W. F. Entwistle, Bradford. 3, W. Baskerville, Manchester. *hc*, W. B. Jeffries; W. Baskerville. c, S. J. F. Stafford. *Any other variety*.—1, W. F. Entwistle. 2, — Baskerville. 3, R. Newbitt.

**BANTAMS.**—*Black or White*.—1 and Cup, R. H. Ashton, Mottram, Manchester. 1 Local, 2, 2 Local, and *vhc*, T. E. Thirle, Lowestoft. 3, R. Titlow, Halesworth. *hc*, J. S. Pearson; C. Reed. c, M. Leno, Markyate Street, Dunstable. *Any other variety*.—1 Local and Cup, W. E. Newitt, Epworth. 1 Local, H. Procter, Hull. 2 Local, W. Herrod, Lowestoft. 3, M. Leno. *hc*, Miss F. E. Somes; R. S. S. Woodgate; F. H. Spashett; W. Herrod.

**DUCKS.**—*Aylesbury*.—1, J. N. Waite, Yarmouth. 1 Local, 2, 3, and *hc*, F. B. Potts, Wangford. 2 Local, A. S. Clarke. *Rouen*.—1, H. Dowsett. 1 Local, 2 Local, and *hc*, J. Wright. 2, F. Parlett. 3, J. N. Waite. c, Rev. W. F. Dixon. *Any other variety*.—1 and 2, W. Binns, Pudsey, Leeds. 3, M. Leno. *hc*, J. N. Waite.

#### PIGEONS.

**CARRIERS.**—*Cock*.—1 and Cup, E. Walker, Leicester. 2, W. Minson, St. Ives. 3, W. Sefton, Blackburn. *vhc*, G. S. Clements. *hc*, H. Yardley, Birmingham; J. Stanley. *Hen*.—1, J. Stanley. 2, E. Walker. 3, H. Yardley. *vhc*, E. Walker; E. W. Nalder. *hc*, W. Minson. c, C. T. Townsend; G. S. Clements. *Young*.—1, E. Walker. 2, W. Sefton. 3, C. H. Clarke, Old Sneyton, Nottingham. *hc*, E. Walker; C. H. Clarke; F. Ford, London (2); H. Thurlow (2); W. E. Thurlow, London (3).

**POUTERS.**—*Cock*.—1, C. H. Byrd, Ipswich. 2, H. Thurlow. 3, L. Watkins. *Hen*.—1, L. Watkins. 2, Owen & Pearson, Kettering.

**BARBS.**—1, D. Bedford, Kirkley. 2, H. Yardley. 3, J. Stanley, Blackburn. *hc*, C. Norman; H. Thurlow. *Young*.—1 and 2, H. Thurlow. 1 Local and c, D. Bedford. 3, W. H. Tomlinson, Newark-on-Trent.

**TUMBLERS.**—*Balds or Beards*.—1 and 2, W. Woodhouse, King's Lynn. 1 Local and 2 Local, C. Cowles, Lowestoft. 3, G. W. Banna, Lowestoft. *vhc*, T. Holmes; W. Sefton. *hc*, G. & W. Banna; C. Cowles (2). c, S. Westerdale. c, C. Cowles. *Any other variety*.—1, 2, and 3, J. Ford. 1 Local and *hc*, C. Cowles.

**CANTAILS.**—1 and 3, — Tomlinson. 1 Local and 2 Local, F. S. Worthington, Lowestoft. 2, J. F. Loversidge, Newark. *hc*, — Tomlinson; F. S. Worthington (2).

**DRAGONS.**—1 and Cup, W. Sefton. 1 Local, 2, 3, and c, A. W. Wren, Lowestoft. *vhc*, E. Lee; H. Thurlow; W. Sefton. *hc*, H. Yardley; J. Stanley; W. Sefton.

**ANTWERPS.**—1, A. Bentley, London. 1 Local, D. Bedford. 2, J. Stanley. 2 Local and c, A. Bennett, Lowestoft. 3, W. Binns. *vhc*, H. Yardley. *hc*, H. Thurlow; D. Bedford.

**ANY OTHER VARIETY.**—1. — Bions. 1 Local and 2 Local, Miss F. E. Somes, Yarmouth (Danish and Trumpeters). 2, E. Silvester, Sheffield. 3, J. H. Watkins. *hc*, H. Yardley; J. Atkins (Hymenith).

**SELLING CLASS.**—1, Local, 2 Local, and *vhc*, A. W. Wren (Yellow and Red Dragons). 2, W. Sefton. *hc*, G. & W. Banna. *c*, W. Tomlin (Magpies); J. Ford; Hon. Mrs. Paga (Florentine Runts). c, Miss E. A. Eeles (Runts); W. V. Long (Black Barbs); A. W. Wren (Yellow Dragons).

**JUDGES.**—Rev. T. L. Fellowes, Honningham Rectory, Norwich; Mr. E. Hinton, Pudsey, near Leeds.

#### PRACTICE VERSUS PROFESSION.

##### BROMLEY POULTRY SHOW.

THE second attempt at a poultry show at Bromley was in quantity and quality a success. But how about management? The Treasurer has long been known as a poultry theorist, criticises all, yet it would seem that self-knowledge and self-criticism would be the most applicable in this ill-conducted business.

1st. A bird, value £25, stolen.

2nd. No receipt given for bought pens.

3rd. No notice sent to owners of sold birds, who anxiously waited their return.

4th. The Selling Pigeon class omitted altogether in the official prize-list.

5th. The London, Chatham, and Dover Railway Company distinctly and in writing deny that any authority was given for the publication that birds would be returned on their line free, thus deceiving exhibitors, who now have to pay, and may have been induced to send pens they otherwise would not have sent. Further comment is needless.—REPORTER.

#### NEGLECTS BY POULTRY-SHOW SECRETARIES.

I ENTERED two pens at the late Cannock Show, and included in the post-office order 7d. for a catalogue, and wrote across the bottom of the certificate of entry that I had enclosed 7d. for catalogue, to be sent off the first day of the Show. My two pens were exhibited, but to my surprise the catalogue had not arrived three days after the Show opened. Of course I wrote to the Secretary, asking the reason, and told him that I expected it would be sent off immediately, or, if it could not be sent, to return stamps, less one for postage—but no reply or notice whatever. I waited a few days, then wrote again—still the same treatment. Then another exhibitor called upon the Secretary at Penkridge. He was not at home, but he left word about the catalogue—still the same effect. Again I wrote, experiencing the same neglect as before. I think that secretaries of shows, having money entrusted to them, should at least send (if they intend to send at all) the second day of the show. It is very well for a man to jump at the idea that he can conduct a show, but he should see that its details are carried out properly, so that there may be no disappointment to those who have entrusted their money to him. Another exhibitor, who won a cup there, did not know till ten days after the Show. He was depending on my catalogue being sent.—GEORGE RODEN, Penn, near Wolverhampton.

[We insert the above as one of many similar complaints. The least that an honest secretary could do would be to return the stamps, deducting one for postage.—Ens.]

#### REMOVING FOWLS FROM THE LATE BRISTOL POULTRY SHOW.

I WAS induced to exhibit a few pens of Dorking pullets, having a wish to see my birds stand side by side with others, so that I might be enabled to judge of their merits. On entering the Show on Saturday I found that my two pens of pullets had been highly commended, and both claimed; but guess my surprise to find that one pen of birds was taken away, notwithstanding the rule laid down that birds cannot be removed before Tuesday morning. Will any single-minded exhibitor say I have been fairly dealt by? I have asked for the addresses of the purchasers of each pen, and that has not been granted me. I have had birds claimed at the Birmingham and Crystal Palace Shows, and have invariably been furnished with the name of the purchaser. My object in speaking thus through your Journal is the hope that such errors will not again be repeated.—A LOVER OF FAIR PLAY.

#### THE CORAL-EYED PIGEON.

ANYONE who has paid attention to the subject will have perceived a great diversity in the colour of the iris in the eyes of Pigeons. The Tumbler, Barb, and Jacobin should both be clearly white or pearl-eyed; the Pouter should be orange-eyed; and the Carrier has a bright red or fiery eye, but nothing to compare in brilliancy to the eye of a Pigeon bred in India, which the natives call the "coral eye." I have seen many of them, and the colour in all cases was light blue with black bars; the size about the same as a Flying Antwerp, and with a stout but not wattled beak. The iris of the eye is of the colour of a ruby of the finest "Pigeon's blood" tint, and so brilliant and pure that it can be distinguished, and in fact calls one's attention, at the distance of 3 yards or more.—J. C. LYLE.

#### NORTHERN COUNTIES COLUMBARIAN SOCIETY.

THE annual meeting of the above Society was held at the Cathedral Hotel, Manchester, on the 19th inst. The Secretary laid before the Committee a most satisfactory report of the finances of the Society, also of an increase in members. Mr. Ernest E. M. Roys was re-elected President; Mr. J. B. Pinder and Mr. T. H. Ridpath the Vice-Presidents. The Hon. Secretary is Mr. W. K. Haycroft, 215, Lower Broughton Road, Manchester. The Society has now about fifty members, and in some varieties of Pigeons is very strong. It has done nothing more about the challenge, but hopes are entertained that it will be effected this year.

OXFORD POULTRY SHOW.—The date for the third Show is fixed for the 23rd and 29th of October. The late Show having financially, as well as in point of numbers and quality, proved a success, it is proposed to increase the value of the cups and

prizes, and following in the wake of Cambridge, special prizes in the majority of the classes will be given to be competed for by local exhibitors only. Numerous suggestions previous to the late Show having arrived too late for consideration. The Committee invite the support and opinion of fanciers whose breeds are not already represented in the schedule.

### COMING RABBIT SHOWS.

THE Fakenham and West Norfolk fourth annual Exhibition, to be held on February the 3rd and 4th, is the next Show of any importance to Rabbit fanciers. It has two classes divided in the usual manner—viz., one for Leaps, the other for Any foreign variety, with moderate prizes (including one for the county only), and a silver cup value £2 2s. The entries are already closed. Nantwich follows on February 6th, but is of little or no importance.

Hanley Grand Show will be held on February 10th and following two days. This gives four classes and two prizes to each, besides extra prizes of pottery, &c. The entries, which close on the 31st inst., will, I hope, be numerous, thus encouraging Hanley to give more classes next year.

The first Kettering Exhibition is announced to take place on the 17th and 18th of next month. Although Rabbits are rather scantily provided for, I wish it success with hopes that it will increase in classes as it progresses. The classes are three in number, with three prizes to each of them, and include a selling class, which I hope will be well filled. Entries close on the 2nd.

Walsall has three classes, one for length of ears, another for all properties, and the other is a selling class (price not to exceed £2 in the last). There are good prizes to each class, and a three-guinea cup for competition between them. The Show is to be held in the Agricultural Hall of Walsall, on February 20th, 21st, and 23rd. The entries are priced low, and close on the 9th. Mr. Henry Yardley, of Birmingham, is the appointed Judge, whose awards gave great satisfaction last year.

King's Lynn will give a grand Exhibition on the 26th and 27th of next month. This Show has no less than seven classes for Rabbits, not very well divided, but, nevertheless, with good prizes to them. I hope that this first meeting will be well supported with plenty of entries, since if this is the case, the Committee will no doubt give more classes and prizes at its future exhibitions. Altogether King's Lynn has, I think, made a good start in the right direction. I must not omit to note that all entries close on the 12th. February is rich in exhibitions for Rabbits, and will doubtless be welcomed by fanciers; not less so, however, is March, but of these I will treat in my next on the subject.—A RABBIT FANCIER.

### BELFAST CANARY SHOW.

THIS was held in connection with the Poultry and Pigeon Show, of which the award of prizes was given at page 68. I would preface my notes thereon by calling the attention of English fanciers to two things: That the Show merited their hearty support, and that they didn't give it; in the doing or non-doing of which, I think they made a great mistake, which, I feel satisfied, only requires to be pointed out to ensure its non-recurrence. The somewhat contracted nature of the schedule might possibly, to a great extent, account for this, though there was ample room to make up a fair entry in those varieties which are cultivated on this side of the water. There might also be some hesitation in sending birds across the sea; but on that score let me assure exhibitors there is no ground for apprehension. Birds dispatched from almost any part of England by either of the usual routes on the evening of one day land in Ireland next morning, and the quietest and warmest part of the journey is in the saloon of the steamer. The question of transit should really be no bar to the success of a show in the sister isle.

Just a word in the ear of exhibitors and Canary fanciers generally. You all know as well as I how desirable it is that Canary shows should be in the best possible hands, and what an excellent thing it would be if they were more frequently held in connection with first-class poultry shows, with the liberal scale of prizes and other incentives to emulation which the funds of wealthy societies are in a position to offer. There can be no doubt that a display of cage and song birds is a great adjunct to any show; for though among the crowds of visitors who throng the avenues of poultry and Pigeon exhibitions there is, as in all similar gatherings, a large proportion who look on with the critical eye of a fancier, there is a much larger proportion who visit shows simply as sight-seers; and the more attractive the spectacle can be made, independently of its intrinsic excellence, the greater will be the concourse of visitors, which means influx of revenue and consequent financial success.

Surely there is as much to attract and interest the ordinary sight-seer in a display of birds as in pens of Geese, Ducks, or Turkeys, which, mustering in comparatively small numbers, and presenting by no means an imposing spectacle when viewed from

other than a critic's standpoint, yet absorb a considerable portion of the prize funds. And the music, too, will bear comparison. A recitative from a Goose with chorus from surrounding pens is more noisy than melodious, and not more attractive than the delicious melody which greets the ear when some hundreds of songsters are chanting their lays in notes which give a life and cheerfulness known only to the bird show. I know very well that poultry takes the lead in every way, and do not begrudge it the enviable position it has attained; but I don't feel disposed to be "sat upon" by cats! If pussy has now become an object of attraction—and they are trying to breed cats up to standard markings, to produce tortoiseshell Toms and yellow-striped Queens—surely there is hope for us! The breeding and exhibition of high-class poultry and Pigeons is the luxury of the wealthy, while our quieter but deeply-interesting hobby is essentially the child of the working-man, the companion of the unobtrusive thinker, who loves to be absorbed in such a pursuit rather than in the many objectionable pastimes which beset the path of the artisan, glad to find some relief for the mind after the drudgery of his daily toil. Still, each in its way is but a hobby, widely differing in character and treading a different walk; and I think all true fanciers and admirers of the best of everything of its kind should recognise the breadth of idea and liberality of those who, in organising an exhibition of their own particular speciality, do not confine it selfishly to that which they alone admire, but open their purse-strings to make the exhibition more comprehensive, and embrace every variety of domestic bird, from the lowly tenants of the poultry-run and the wonders of the Pigeon-loft, down to the equally wonderful varieties of modern Canaries, and the more modest but not less interesting songsters of our woodlands, or the less melodious but more gorgeously-attired denizens of far-off lands. I see no reason why, during a great portion of the year, poultry shows and bird shows should not go hand in hand, and am well assured each would be mutually benefited.

"The best route is to Stranraer, and then by steamer to Larne—about three hours' passage, and in daylight. Yours truly, W. G. Mulligan." Yours truly W. G. Mulligan had said, in a previous note, something about Fleetwood and Barrow; but a reference to the map showed it was a roundabout way, ending in a long dotted line, indicating the track of the Belfast steamers. The dotted line was far too long for me. It looks very well on the map; but half a day at sea when the Fitzroy drums are hoisted is not so—well, try it. Commend me to the Stranraer route with only three hours' sea passage, and in daylight. To arrive in time for the steamer necessitates an early start; but the view at daybreak amply repays for any inconvenience of that sort. Daylight saw us at Castle Douglas, and thence to Stranraer the line runs through the wildest country. One sometimes sees bits of warm colouring in hill scenes, specially in chromos, and we wonder whether such things are; but no art could depict the wild beauty of this corner of Scotland; and were it coloured true to nature, few would believe in the picture. To one living in a district where the winter landscape is of the chessboard pattern, with large black and green squares interspersed here and there with homesteads, pretty enough in its way, it was something new to travel for many a mile through the grand old hills, many of whose lofty ridges were sprinkled with snow, while on their rugged sides and in the valleys the rich hues of autumn still lingered in warm glowing tints, unlike anything but themselves. No trace of any habitation was visible for miles, except occasionally a rude peat-thatched hut, and no signs of life other than a few sheep, with snowy fleeces, or a small drove of rough, wild-looking, shaggy oxen, with now and then a few Grouse, which, disturbed by the passage of the iron horse, took wing lazily, and settled down again quietly when the rush was over. One or two stops (at one of which a Cochin, which I saw fall off a barrow at Carlisle, then turned upside down, and finally almost pitched into the van, broke the silence with that peculiar crow and a cadenza in A minor, in which his heart delights), and we pulled up at the rude open platform on Stranraer pier, where the "Princess Louise" was waiting to give us a taste of "about three hours' passage, and in daylight." Yours truly, W. G. Mulligan, who sat at home at ease, how little did you think upon the dangers of the seas when you lured four unsuspecting victims on board that steamer! For besides myself and Mr. Baxter, it transpired that my colleagues, Mr. Jones and Mr. Leno, were on board, and had travelled with us and the melancholy Cochin from Carlisle.

The little town of Stranraer is charmingly situated at the south end of Loch Ryan, which, a fellow *voyageur* assured me in a Scotch accent, was the prettiest salt-water lake in Great Britain. If there be prettier, pretty indeed must they be. Horse-shoe-shaped and enclosed by hills, it presents a noble sheet of water, up which we steamed for some thirty or forty minutes at fourteen knots in smooth water, during which few minutes of peace most of the saloon passengers indulged in breakfast. I didn't. I couldn't quite make up my mind whether it would prove a freight to be carried comfortably in a heavy sea. Some cargoes are apt to *shift*. So I stowed myself quietly away, and

watched the tarpaulins being placed over the baggage, and the canvas awnings rigged to windward, and other signs of preparation for a dusting; while my Scotch friend pointed out the beauties of the Loch and the little village of Cairnryan, with its white cottages, its church, and its lighthouse, dotted like baby-houses on the east shore under the shelter of the high land. Before emerging from the Loch into the open sea most of the passengers came on deck. One naturally takes stock on such an occasion, and I was rather impressed with an Ulster coat, seal-skin cap, long greyish beard and short meerschaum, which said how it had enjoyed the fried fish below. Fried fish! hot! and the "Princess Louise" evidently beginning to be drunk and rolling about in a most improper way. But the Ulster coat seemed to enjoy the fun, and was evidently in for three hours' enjoyment—and in daylight. Beside me was a horserug, and under it was Mr. Baxter; and by-and-by, when the "Princess" was behaving in a way altogether beyond the bounds of common decency, I saw the Ulster coat and the horserug going through a most expressive pantomime, backing, and filling, and tacking, with the intention of speaking each other; and ultimately—(whether Mr. Baxter brought the Ulster coat or the Ulster coat brought Baxter I won't hazard an opinion, but my impression is each was glad to hold on to the other)—the Ulster coat was introduced to me as Mr. Jones. We shook hands, but I didn't rise; I thought if I did something else might rise, and, as my Scotch friend (who had vanished) said, "it comes on you in a moment." Another half-hour, and we were fairly in for it. Loch Ryan was far astern, and Lough Lorne on the Irish coast was far ahead. Away to the north, Ailsa Craig loomed in the distance like a huge sugarloaf, and the only craft I could see were a screw collier and a schooner apparently bound for the Clyde; and the heavy seas, after giving us a pitch and a roll, and jumping over the paddle-boxes, and over the engine-room, and down my neck, chased one another in a wild gallop after the screw and the little schooner; and after taking a peep on board rushed on to spend their strength on Ailsa Craig. I had experienced a deal of chaff before leaving home, and the horrors of the middle passage had been so pleasantly depicted by empathising friends that at one time I was considering the advisability of going into training on a swing and taking regular exercise in a mild way in a rocking-chair. The fate of the wretched man who, in describing his sensations when sick, said, "At first I was afraid I was going to die, but at last I was afraid I wasn't," was held up as a warning to me, but none of these horrors overtook me; and by the time we got under the shelter of the Irish land, and what remained of Mr. Leno, who had been stowed away below, had been brought up out of the saloon, and Lorne opened the arms of its friendly little Lough to welcome us to Ireland, I was ready to aver that the "three hours' passage, and in daylight," was a most enjoyable part of our journey. An hour's ride by rail, skirting Belfast Lough all the way, and we were in the metropolis of the North of Ireland, and, chartering a "kyar," were soon deposited at the "Imperial."—W. A. BLAKSTON.

(To be continued.)

**OVERFEEDING FOWLS.**—In my experience of keeping fowls I have been more troubled with overfeeding than with any other poultry ailment. I have just lighted upon the following fable of Æsop:—"A woman possessed a hen that gave her an egg every day. She often thought with herself how she might obtain two eggs daily instead of one, and at last to gain her purpose determined to give the hen a double allowance of barley. From that day the hen became fat and sleek, and never once laid another egg." This fable may not be generally known.—C. H. S.

## FEEDING BEES, AND HONEY EXHIBITIONS.

"A LANARKSHIRE BEE-KEEPER" expresses surprise at the mode of feeding advocated by myself, which is in the main similar to that recommended by Mr. Pettigrew. The fact is that I for my part find the bottle not always to be relied upon. Given every favourable circumstance, the hives populous, and the bees hungry, the bottle placed just over the greatest mass of them, the weather warm enough, and the food of the exact consistency, neither too thin nor too thick, then I grant the bottle is the best feeder of my acquaintance, and I have tried a great variety in my long experience. But what if any, or perhaps all, of these circumstances be wanting? In point of fact, this feeder, good as it is in itself, often fails in saving a hive, and particularly in cases where the bee-keeper is mostly absent from home by day and cannot watch his hives. The pages of THE JOURNAL OF HORTICULTURE bear witness to the frequent disappointments which have followed from its sole use in times of trial. *Experto crede.* As to the "fuss of feeding so hurriedly," all I can say is that oftentimes the sooner it is over the better. It may be prolonged with advantage at times when it is desirable to keep up (as in autumn), or to quicken (as in spring) the breeding of young bees; but in most cases, and always late in the year when it is desired simply to bring a hive up to a

proper weight of food, it is obvious that the sooner it is over the better. To prolong feeding unnecessarily is to stimulate the hive unnecessarily, and that at a time when every bee's life is precious, and the risks of loss are great. Surely, then, the quicker it is over the better. I must add that I do not recommend "pouring 2 lbs. of sugar at a time on a hive of bees."

And now to another subject. I must confess that I read with amazement the open defence in your columns of the 22nd inst. of the "unrestricted" exhibition of supers, such as were shown at Manchester last year. All I can say is, that I for one should decline to subscribe to or to visit any such exhibition in future. After all, where is the difference in the cases put forward by your correspondent Mr. Bagshaw, and branded justly by him, and cases like that to which I have alluded? "To sell sugar syrup for honey, or foreign honey as the pure nectar of English flowers, is right down dishonest, and deserves visiting with as severe punishment as any other fraud." Well and good. But where is the difference in my offence if I exhibit, as the *bonâ fide* produce of a stock of English bees in any given summer, a super which is filled with honey artificially gathered (not from flowers by the bees themselves), and artificially stored in cells which are not of the bees' own constructing? Here is "a distinction without a difference!" If the object of exhibitions be merely to gratify a gaping curiosity—to produce "something strikingly grand for visitors to look at," as Mr. Pettigrew puts it, then we are going in for "Barnum" to an extent that is destructive of all reality and truth, and I answer unhesitatingly that "shows (of this kind) have a demoralising tendency." If it be legitimate to "resort to every method that art can suggest to accomplish the desired result," why stick at any cheater or dishonesty? I may be very old-fashioned, and my notions very out of date, but I confess that I rarely attend any exhibitions of flowers and fruits, or poultry, because of the shameless tricks which are "perfectly understood" to be practised in order to produce "something strikingly grand" in the way of effect. The same applies to the enormously fat cattle and pigs which have been exhibited at Smithfield and other shows of a like kind. The result is disease, and not wholesome meat. When shows were first instituted, the object certainly was not to astonish the vulgar, but to improve our methods of production, to stimulate industry and enterprise in that direction, and to push reality to its utmost limits in every department of horticulture and agriculture. It has had a marvellous success, but I challenge contradiction to assert that that success has been owing to art apart from truth.—B. & W.

## OUR LETTER BOX.

**BROMLEY POULTRY SHOW.**—The first prize in "Bantams, any other variety," was awarded to Mr. Charles Reed for Blacks. (*H. Ritchie*).—You should return the birds wrongly sent to you, and demand from the Secretary your own birds or the £30 at which they were catalogued. If you have neither sent to you, consult your attorney. (*D. C.*)—You certainly ought to have had your birds before the 16th; but who was in fault, the Secretary or the railway officials? The third prize for Light Brahms hens we are informed was awarded to Mr. J. Mitchell, and that Mr. E. J. Reeves received an extra prize.

**BANTAMS WITH OTHER FOWLS** (*X. Y. Z.*).—If your "common fowls" are such as Dorkings and Brahmas, they might be in the same run without fear of the Bantam chickens being cross-bred.

**HENS NOT ANSWERING EXPECTATIONS** (*Thomas*).—We think you have no remedy. Hens when removed to another yard are liable to irregularity; and the conclusive bar to any claim against the vendor is that you saw the hen and bought her, having only a doubt about her age. You have no proof to show she is older than was represented.

**EGG-PRODUCERS** (*Welby*).—We did not mention the Hamburgs. Those we did name lay nearly as many eggs, and those they lay are much larger. We repeat we should keep either Spanish or Crève-Cœur. We would give them the run in the orchard; and if you are disposed to try Hamburgs, turn some Golden-spangled into the street. Your orchard range will accommodate a larger number than you name. You must secure winter eggs by keeping spring pullets.

**KROODY BRAHMAS** (*N. T.*).—"What," said my aunt, "shall I do with this boy?" "Give him some breakfast," said Mr. Dick. It was what the boy wanted, and it was the right thing to do. What are you to do with broody Brahmas? Let them sit. It is what they want, and it is the best thing for you to do. Give them thirteen eggs each. They will hatch most of them, and they will be the most easily-reared chickens of the year, and the most saleable birds. We wish we had them. We are praying for broody hens, and seeking them far and near. You have bought fourteen pullets since December 4th. They have laid 104 eggs—lowest value 17s. 4d. In three weeks you will have from eighteen to twenty chickens. In the meantime you have four pullets still laying, and the two about to change their occupation will lay again in March. We congratulate you on your success. No amount of management could enable you to do better.

**FOWLS IN VERY SMALL SPACE** (*L. A. B.*).—You may keep a cock and three hens, either Brahmas, Cochins, Spanish, or Crève-Cœur, subject to providing them with grass on growing sods; green food, as lettuce, &c., and small heaps of road grit. If the yard is paved, you must cover it some inches thick with gravel or grit.

**ARRANGEMENT OF COCKS AND HENS** (*J. P.*).—As many hens and broods as you have may be put together. It does not make the slightest difference. You may also run all your birds together. We advise you, however, to remove two of the cocks in March and another at the end of April.

**BLACK BANTAMS** (*Bantam*).—We do not believe you can use a White cock without injury to your breed unless you have hens or pullets that have been

kept apart. You will be too late for this year, but you should buy or borrow the best cock you can find and put him to your own pullets. Save all the eggs for sitting, and next season you will have fresh blood throughout the run. Wherever it is wanted to breed the best of anything there should always be a reserve yard or pen.

**THE POULTRY HAREM (W. D.).**—Your average of eggs is far above our experience, and we are sure far above that of most of our readers and correspondents. Our theory is, four hens to a cock in January, six in February, eight in March, and no rule afterwards. We speak of the runs where the eggs are laid that we intend to set.

**EGGS BLOOD-STAINED (Soldier).**—Have you been using stimulating food to promote laying? If you have, that is the cause. Whether you have or not, something the hens eat causes the appearance of which you complain. Whether by accident or design you leave the beaten track, you are sure to go astray. If you will feed on ground oats or barley meal morning and evening, on some maize or table scraps at mid-day, and avoid all things that are said to be so good for fowls, you will have proper eggs. If your fowls are kept in confinement you must supply them with fresh earth and growing grass.

**HENS' NESTS (E. H.).**—A basket will make a sitting place for a hen, so will a butter-tub sawn in half. The sooner you set Dorkings the better. We prefer the Ronen to the Aylesbury Duck, unless you wish to eat very early ducklings. It is essential for eggs that they should be damped before hatching. Failing that, some die in the shell, some come out weak. In the case you mention the hen left her eggs every morning in all weathers to feed, and, unless your climate has differed from all we know, she could not do that without returning to her nest wet through.

**VARIETIES TO PREFER (Young Fancier).**—You may keep Spanish, Hondan, Crève-Cœur, or Brahma, we think the latter. If the run be not grass you must provide them with it. Let the door of the house be in one corner and not in the middle.

**VARIOUS (Jack).**—You may give all your scraps. We give no artificial foods. Feed your Crève-Cœur on ground oats, barley meal, scraps, and a little maize, and if they have a grass run they will do well. Some say the hybrid Pheasants you mention breed, we do not think they do.

**BRAHMA CHARACTERISTICS (Brahma).**—The Brahma hen has no tail as the word is understood in other breeds, save the Cochins; there is merely a rise from the rump terminating in a point, instead of getting wider towards the end as in other breeds. The cock's tail should be carried neither horizontally nor erect, but midway. An erect tail is a defect.

**BONE DUST FOR FOWLS (Idem).**—We do not believe in feeding on bones. It is a mistake. Fowls are not different from other things. The natural food of a fowl supplies all that is necessary for growth and the formation of bones. Doctors do not prescribe bones for infants, and birds in a state of nature cannot get them. If you will supply good ground oats and barley meal or other corn in which the hull is ground with the flour, you have all you want. All the material of bone and sinew is especially found in the hull of oats.

**MAIZE FOR FOWLS (L. A. B.).**—Maize is an adjunct. It is not good food by itself, as its property is to make fat. It may be given as one in three meals, but not more. It should be given raw, and its merit as winter food is, that the small birds cannot pick it up. Ground oats and barley meal mixed with a small portion, say a twelfth, of peameal served slack in a trough, is the best food for fattening Turkeys. The largest Geese are the Toulouse; they commonly attain the weight of 20 lbs., and are of undeniable quality. They lay large numbers of eggs, but do not sit.

**A NON-LOVING COCKEREL (Brahma).**—Such dislikes are rare, but they occur sometimes. In the experience of forty years we have only met with it once. We should try the gentleman longer.

**NUMEROUS DEATHS (Boynton).**—Wholesale and speedy death can only be accounted for by poison, and we believe this is your case. Many animals are strangely affected by disinfectants.

**HONDAN'S HOCK BROKEN (Sam).**—Your Hondan cock is useless. If the bird is cured (?) he will have a stiff leg. We answered your question as plainly as we could. A bird hatched in 1873 is not a cockerel in February, 1874. The mistake is with those who made the list. A bird hatched in January, 1873, is, in February, 1874, thirteen months old and an adult. No judge in the world can tell the difference between a hen of thirteen months and one of two years. They may guess at the cocks, but they cannot be sure. If at a show in February there is a class for chickens they must, of necessity, be birds of the previous year. It opens a door for false entries.

**COCKS FIGHTING (Rus in Urbe).**—The only cure is to let them fight it out. If they are only in fair proportion to the opposite sex there will be no fighting. We have a hundred Brahma hens running with twenty cocks—we have not had a fight. If you are disposed to overcome the pugnacity of your birds, employ a boy, furnished with a long rod to which an empty pillow-case should be tied at the end; when two begin fighting, let him buffet both alternately with the pillow-case—they will soon leave off.

**POINTS IN A SHOW DRAGON (W. T. C.).**—Dragoons should not be large birds, but of moderate size, neat and compact in form, tight in feather, have sharp-pointed wings, be broad in shoulder, with butts well displayed, and narrow-rumped. The head should be long and straight; skull narrow, well-developed at the back. The eye should be large and prominent; the lash, cere, or flesh-wattle uniform, equal, white, and circular, with but little of it. The wart upon the beak should be small, and not overhanging. The neck should be long, slender, and graceful; the carriage erect; the legs long, clean, and angular; the feet large. The general bearing of these birds is of a timid, tremulous kind, invariably displaying a shaking and nervous temperament. Blue Dragons should be of a good sound colour upon the sides of the wings, head, belly, thigh, back, and tail. The head is generally of rather a darker hue; the neck also dark, and gorgeously illuminated with bright iridescent colours, and terminating in a distinct and circular line upon the shoulders, breast, and back, thereby producing a pleasing contrast with the lighter and less brilliant parts of the body; the lower extremity of the wing covers has two narrow and jet-black bars running obliquely, and terminating just above the thigh; the tail also has a band of black about an inch wide, and within a quarter of an inch of its end; the flight feathers are dark. The beak also must be dark; the eye of a bright red colour; and the legs and feet red, and with dark nails.

**MATING RED COCK JACOBIN OR TURBIT (Amateur).**—As you want a solid deep-red colour, failing obtaining mates of that colour, we would advise your mating your birds to good blacks.

**PIGEON'S BEAK BROKEN (Constant Reader).**—The bird suffers from the broken beak; and although he may appear to feed well, it is evident he does

not. We use for the destruction of all parasites carbolic acid and water—one part in fifty. It requires to be carefully used, but it is infallible as a destroyer of all parasites.

**TRANSFERRING BEES (C. H. E.).**—We thoroughly understand your questions, but cannot advise you to follow the "OLD MAN'S" plan of getting bees to leave their hive. We have never found a queen to leave its hive when treated as the "OLD MAN" suggests. Many of the bees go back to the old place, but will not stay in an empty hive. They molest the other hives standing near in seeking a home. We think the "OLD MAN'S" plan carried into practice would be ruinous to nine hives out of ten. The other way of driving or shaking the bees out is more certain of success, and easy of accomplishment.

**PARROT SELF-PLUCKED (R. W.).**—Your Indian Parrot has contracted a very bad habit which is common among such birds when kept long in confinement. All the varieties of Parrots are fond of gnawing, and when not able to gratify this natural propensity they bite off their feathers. To prevent your bird destroying its plumage, fasten a piece of wood inside its cage with wire, with which you will find it will amuse itself. Change its food as often as possible by giving it fruit, boiled rice, nuts, &c., and a little magnesia might be occasionally put into its drinking trough. By no means let it have any fat with its food, and discontinue its bath, or the bird may take cold at this season. If this treatment has no effect see sketch in JOURNAL OF HORTICULTURE for another remedy, date July 3rd, 1873, No. 640.

**GLAZING AN AQUARIUM (An Amateur).**—If the patty is put only between the glass and the frame, and the glass fits closely, not the slightest injury to the fish, &c., will occur.

#### METEOROLOGICAL OBSERVATIONS,

CAMPDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	8 A.M.					IN THE DAY.						Rain.
	Baromet. ter at 32 and Sea level.	Hygromet- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.		In. sun.	On grass	
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
1874.												
Jan.												
We. 21	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	deg.	In.	
Th. 22	30.157	40.8	40.2	S.W.	43.0	50.2	36.7	78.9	85.9	—	0.01	
Fri. 23	30.436	37.0	37.0	W.	42.3	44.8	38.2	44.6	30.1	0.01	0.01	
Sat. 24	30.256	44.9	41.6	S.W.	41.6	49.8	35.0	59.2	34.9	0.084	0.084	
Sun. 25	30.129	43.8	43.8	N.W.	42.8	49.8	43.6	49.6	48.4	0.165	0.165	
Mon. 26	30.539	33.2	32.2	S.W.	41.5	42.5	28.8	64.8	25.0	0.010	0.010	
Tu. 27	30.459	39.4	38.7	W.	39.6	47.4	31.9	61.0	3.4	—	—	
We. 28	30.492	46.0	43.1	N.W.	41.8	50.2	38.5	80.4	37.2	—	—	
Means	30.358	40.7	39.9		41.9	47.7	35.6	62.6	33.8	0.262	0.262	

#### REMARKS.

- 21st.—Fine morning, bright noon, and beautiful weather all day.  
22nd.—Very dark and foggy all day except for a short time between 1 and 2 P.M.; rather less foggy at night.  
23rd.—Rain and slight fog at 9 A.M. and during most of the morning; bright between 1 and 2 P.M., but dull afterwards.  
24th.—Rainy morning, becoming finer towards noon; fine evening.  
25th.—Fine frosty morning; very bright in the middle of the day, and continuing fair all day.  
26th.—Bright morning, but rather dull and overcast in the after part of the day.  
27th.—A most beautiful day throughout, and splendid moonlit night. Although not quite so warm as some previous weeks it has been more pleasant, with bright sun on several days.—G. J. SIMONS.

#### COVENT GARDEN MARKET.—JANUARY 23.

Both the London and provincial markets are comparatively inactive at present. Prices remain nearly unaltered from last quotations, and imports have been somewhat lighter during the past week. Kentish Cob Nuts are still offered in considerable quantities, and a slight reduction has had to be submitted to in the trade, prices varying from 75s. to 80s.

#### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 sieve	1 0 to 1 6	Mulberries.....	1 lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0 0	Nectarines.....	doz.	0 0 0 0
Cherries.....	doz.	0 0 0 0	Oranges.....	100	4 0 12 0
Chestnuts.....	bushel	10 20 0 0	Peaches.....	doz.	0 0 0 0
Currants.....	1 sieve	0 0 0 0	Pears, kitchen.....	doz.	1 0 2 0
Black.....	doz.	0 0 0 0	Pears, dessert.....	doz.	2 0 5 0
Figs.....	doz.	0 0 0 0	Pine Apples.....	lb.	3 0 0 0
Filberts.....	lb.	1 0 1 6	Plums.....	1 sieve	0 0 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 0 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	2 0 7 0	Strawberries.....	1 lb.	0 0 0 0
Lemons.....	100	4 12 0 0	Walnuts.....	bushel	10 0 16 0
Melons.....	each	1 0 3 0		100	2 0 2 6

#### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	8 0 to 6 0	Mushrooms.....	pottle	1 0 to 2 0
Asparagus.....	100	4 0 8 0	Mustard & Cress.....	punnet	0 2 0 6
French.....	25	0 0 0 0	Onions.....	bushel	5 6 5 0
Beans, Kidney.....	100	2 0 0 0	Pickling.....	quart	0 6 0 0
Beet, Red.....	doz.	1 0 3 0	Parley per doz. bunches	4	0 6 0 0
Broccoli.....	bundle	0 3 1 6	Parsons.....	doz.	1 0 0 0
Cabbage.....	doz.	0 0 0 0	Pears.....	bushel	0 0 0 6
Capsicums.....	100	1 6 0 0	Potatoes.....	bushel	5 6 4 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	0 0 0 0
Cauliflower.....	doz.	3 0 6 0	Round.....	do.	0 0 0 6
Celery.....	bundle	1 0 2 0	Radishes.....	doz. bunches	1 0 1 0
Coleworts.....	doz. bunches	2 8 4 0	Rhubarb.....	bundle	0 9 1 6
Cucumbers.....	each	1 0 2 6	Salsify.....	bundle	1 0 0 0
Endive.....	doz.	0 0 0 0	Savoy.....	doz.	1 0 0 0
Endive.....	doz.	2 0 0 0	Scorzoneria.....	bundle	1 0 0 0
Fennel.....	bunch	0 3 0 0	Ses-kale.....	basket	1 0 2 6
Garlic.....	lb.	0 6 0 0	Shallots.....	lb.	0 8 0 0
Herbs.....	bunch	0 8 0 0	Spinach.....	bushel	2 0 8 0
Horseradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	2 0 4 0
Leeks.....	bunch	0 5 0 0	Turnips.....	bunch	0 5 0 4
Lettuce.....	doz.	1 0 4 0	Vegetable Marrows.....	0	0 0 0 0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEBRUARY 5—11, 1874.	Average Temperature near London.			Rain in 48 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m. h.	m. h.	m. h.	m. h.			
5	TH	Meeting of Royal and Linnean Societies.	45.7	33.5	39.6	20	34 47	54 44	22 9	16 9	18	14 17	36
6	F		46.5	32.6	39.6	21	33 7	56 4	31 10	27 9	19	14 21	37
7	S	Dr. Priestley died, 1804.	46.9	33.0	39.9	24	31 7	58 4	41 11	37 9	20	14 24	38
8	SUN	SEXAGESIMA SUNDAY.	45.6	32.0	38.8	22	29 7	0 5	morning.	43 9	21	14 26	39
9	M	Meet. of Royal Geographical Society, 8.30 P.M.	45.3	31.6	38.4	17	27 7	2 5	53 0	4 10	22	14 28	40
10	TU	Royal Horticultural Society's Annual General	44.9	30.1	37.5	16	26 7	3 5	8 2	24 10	23	14 29	41
11	W	Meet. of Society of Arts, 8 P.M. [Meet. 3 P.M.]	44.5	29.8	37.2	19	24 7	5 5	25 3	51 10	24	14 29	42

From observations taken near London during forty-three years, the average day temperature of the week is 45.6°; and its night temperature 31.8°. The greatest heat was 65°, on the 10th, 1831; and the lowest cold 3° below zero, on the 11th, 1845. The greatest fall of rain was 0.67 inch.

## THE VALUE OF FUEL.



HE remarks of Mr. Abbey in one of the numbers of the Journal towards the end of last year, and the interesting experiment which he had previously recorded, open-up a subject of great importance to the horticulturist, as indeed to the public. I will endeavour to reply to Mr. Abbey's queries, but it will be most convenient to do so in the order which a discussion of the questions involved naturally takes. I may, however, here remark that while Mr. Abbey's tables of heating power (in which the second column should be from 32°, not zero, to 212°) are roughly correct as regards the comparison of different fuels, yet as they have been constructed from observation of the greatest amount of heat obtained, they are open to the suggestion that combustion in different forms of apparatus would probably lead to different results. It will be better, then, to commence by giving the total quantity of heat which each different combustible is capable of yielding, leaving to after-consideration what arrangements in practice are calculated to render the largest possible amount of such heat available.

The amount of heat given out in combustion is usually estimated in "units of heat"—i.e., the number of pounds of water raised 1° by the combustion of 1 lb. of the fuel. Care must be taken in using the figures of different experimentalists not to confuse the degrees Centigrade, in which many of the observations are recorded, with degrees Fahrenheit. To convert the former into the latter the number must be multiplied by 1.8. I shall, however, use degrees Fahrenheit alone. Further, in order to convert observations of the number of pounds of water vaporised at 212° into "units of heat," it is necessary to multiply by 962°, which is the latent heat of steam at 212°. According to the average of the most recent observers the units of heat evolved, and corresponding quantity of water evaporated from 212°, by the principal elements of combustion are in round figures—

	Units of heat.	Pounds water evaporated from 212°.
Carbon.....	14,500	15
Hydrogen.....	61,000	63.5
Sulphur.....	4,000	4.14
Carbonic oxide..	10,000	10.4

I give the latter (carbonic oxide) in order that it may be seen that if by imperfect combustion carbon is only converted into this gas, it only produces about one-third of the heat which it gives when converted into carbonic acid by perfect combustion, the remaining two-thirds being evolved by the combustion of the carbonic oxide; and the reason is that carbon in passing into a gas absorbs and renders latent, just as steam does, a large proportion of the heat evolved, while after it has reached the gaseous stage its heat of combustion becomes wholly sensible heat.

Partly from these data and partly from direct observation, the heat given out by fuels of compound nature

has been pretty accurately ascertained. It must, however, be kept in view that coal and coal gas are both of a variable composition, and hence the figures can only be regarded as an average, from which considerable variance may occur.

	Units of heat.	Pounds water evap. from 212°
Coal gas .....	25,200	26
Petroleum .....	20,500	21
Oils, wax, &c. ....	18,000	18½
Welsh steam coal .....	15,400	16
Newcastle do. ....	14,400	15
Do. household coal..	13,000	13½
Coke .....	12,500	13
Dry peat .....	9,620	10
Dry wood.....	7,200	7½

These, however, are the results obtainable only when combustion is absolutely perfect, and when the whole resulting heat is obtained for measurement. In the case of compounds containing hydrogen, if the gases formed pass-off before being reduced below 212°, so as to condense the steam into water, the latent heat of the steam absorbs about one-fifth of the total heat due to the hydrogen. And it may show how difficult is the utilisation of the heat if I mention that in the only direct experiments made on the heat evolved by coal gas with which I am acquainted, though they were carried out by so eminent a chemist as Dr. Dalton, the heat measured reached only 12,000 units, or less than one-half of what theory would assign. So also in regard to coal, the experiments of Watt, Black, and Rumford assigned it only an average of 7000 units, which in practice is still found generally correct, although in the Cornish engines, which are constructed so as to economise the whole heat, an amount not materially less than that given in the table has been occasionally reached.

The only method by which, in the application of heating apparatus to buildings, it is possible to extract from fuel an amount of heat approaching to the theoretical values is by direct combustion within the building itself, either retaining the products of combustion in the atmosphere, or so conducting them through cooling surfaces that they yield the whole of their heat before passing into the open air. Thus a petroleum or oil lamp burned without a chimney in a greenhouse will give heat quite equal to the tabular figures. A gaslight burned under a chimney will give the tabular heat, minus so much as passes off through the chimney. A brick stove, burning coal or coke, will give the heat due to the fuel minus the amount contained in the air and steam which goes up the chimney. This is reduced to a minimum when the air admitted is just sufficient for perfect combustion, as in the Arnott stove, or when the chimney is elongated into a flue, which abstracts most of the heat from the gaseous products before they escape: hence the remarkable effect produced by small quantities of fuel in Mr. Rivers' brick Arnott stoves, which are wholly within the house to be heated. A flue apparatus with the furnace fed from a stokehole is more wasteful by the amount of heat given off in the stokehole itself, which may be much or little, according to the arrangement. But the most

wasteful of all is a hot-water or steam-heating apparatus without the addition of smoke flues. From the most perfect of these the gases of combustion must pass off at a temperature hardly under  $212^{\circ}$ , for the water cannot abstract heat below its own temperature; but in practice even this result is never approached.

In the best ordinary steam engines the proportion of boiler exposed to the action of the fire and hot gases is not less than 5 or 6 square feet for every pound of coal consumed per hour, yet the air as it escapes from the chimney has a temperature of  $500^{\circ}$  to  $800^{\circ}$ . The Cornish engines expose a very much larger boiler-surface. I have not the figures at hand, but possibly some of your correspondents could supply them. If a good marine or fixed engine, carefully watched by a stoker who adds fuel every few minutes that it may burn clear and bright, and presenting a boiler-surface to the fire to the extent above mentioned, is only able to extract 7000 units of heat from coal which actually yields 14,000, how enormous must be the loss of heating power in an ordinary hot-water boiler, in which a change of fuel is expected to last many hours without attention, in which the boiler-surface instead of being at the rate of 6 square feet per pound of coal per hour is probably not one-tenth of that extent, in which the smoke is hardly at all consumed, and the temperature of the effluent gases at the chimney top is probably not much below a red heat.—J. BOYD KINNEAR, Guernsey.

(To be continued.)

### PEACH FORCING.

FORCED PEACHES will require more than ordinary care this season. August—a very important month to those who have to force early fruit—was very wet and dull, at least in the western counties, and not at all suited to the ripening of wood and fruit buds. Where attention had been given early in the season, and no more shoots allowed to grow than were really necessary, sufficient would probably be so far matured before the dull weather not to be materially injured by it.

Trees shut-up at the beginning of December, and kept at from  $45^{\circ}$  to  $50^{\circ}$ , will now be in full flower if the wood was well ripened, and anything we can do to assist them at this unnatural season ought not to be delayed a day. It is not only this season's fruit we have to think of, for the permanent health of the trees ought always to take the first place in our thoughts. Everyone will allow that the act of setting the flowers is a great strain on the tree's energies; I believe it even greater than during the process of stoning, because at the time of stoning the trees are in thoroughly good growth, whereas at the flowering time they have scarcely commenced to grow, also there is generally less light and natural warmth to assist them.

Whether I am right or wrong in this, it is clear it is easier for a tree to set a hundred flowers than it is to set a thousand. There are many flowers so placed that if allowed to remain no fruit good for anything could be formed there, owing to want of space, want of light, &c. It is a good plan to begin by picking off all those that are weak or misplaced, or not accompanied by a wood bud, the backward ones, and those at the base of the shoots, thin clusters of blooms, and those on the weaker shoots severely, also thin the lower part of the tree and horizontal branches more than the upper portion; leave flowers on the upper sides of the branches and those at the extremities of the shoots in preference to those at the base; in short, leave them as much as possible where there is room, light, and vigour. Of course, I am supposing that the points of the shoots are well ripened, otherwise the blooms there will not be perfect, and must give way to those that are. Many will say, Leave all the flowers until you see which do set. That is not at all scientific gardening, and as I have already pointed out, more than half of them are useless if they do set. There is, then, evidently a chance to assist Nature, and she will amply repay in future seasons, if not in the present one. It is of no use to be timid about it; a timid man can never make a successful gardener. Of course, a due amount of caution is always necessary. I thin my flowers much more than I shall advise my readers to do at present.

The flowers that are left should not be tampered with in any way. They will always set naturally if they are healthy, and if they are not healthy nothing you could do to them would cause them to bring forth perfect fruit. They should always have air night and day from the time the buds commence to swell, and a temperature of from  $45^{\circ}$  to  $50^{\circ}$  at night and in dull days, allowing a rise of  $20^{\circ}$  or  $30^{\circ}$  by sun heat, with abundance

of air. Do not commence disbudding too early or too severely, rather stop the points of the shoots at first that you intend to take off. Give the border a stimulant in the shape of warm liquid manure, if it is at all exhausted, as soon as some of the leaves are grown to their full size. At any rate take care it is not at all dry inside. I do not advise surface-sprinkling of borders so often as it is usually done; it makes them sour and impervious to air. Once or twice a-week will be sufficient even in bright weather.

Finish thinning altogether when the fruit is the size of a small marble: it is not good gardening to wait and see which will fall at stoning. The same rule applies at this period as at setting the flowers. It is easier for the tree to form a hundred stones than to form two hundred; and if my directions are carried out as to thinning the flowers, &c., the fruit will not be so likely to fall at stoning. If any should fall after proper thinning, it is simply a warning that something is not quite right, and must be attended to before another forcing season commences. Probably a few broken bones and a little new loam would put all to rights.

It is important to bear in mind that the Peach will not be hurried during the stoning period; it will bear a good deal of forcing both before and after, but during that time fire heat should be used very cautiously.—W. TAYLOR, Longleat.

### CALADIUMS AND ALOCASIAS.

As ornamental plants, and from their fine habit and exquisite foliage, they are worthy a place in every collection of stove plants. No one shown through my stove but is filled with delight when seeing *Caladium argyrites*. It is indeed a gem from the banks of the Amazon. *Caladium Chantini* was thought beautiful, but now it is quite in the shade compared with the many varieties since introduced.

They are of most easy culture, and ought to be more largely grown than they are, as well as *Alocasia metallica* with its magnificent bronzy foliage—one of the most glorious stove plants that we have.

It has been said that they are so difficult to grow, and these notes on their culture are written to show how they may be grown from the time they are at rest till they unfold their beauteous foliage in the summer.

When they have shed their foliage place them in such a position that they may be readily examined. Give them just water enough to keep them firm; this is of great importance. The water should be of the same temperature as the stove. In some places it is customary to place them on shelves or under the stages till wanted in spring, hence the many failures. As soon as the first symptoms of growth are visible turn out the bulbs and carefully remove the soil from the tubers, clear away all decayed roots, and see whether the tubers are perfectly sound; if any decayed parts appear, scrape them away and apply a little powdered chalk. The compost should be good sandy peat and decayed leaf mould in equal parts, with a liberal addition of silver sand, a good sprinkling of charcoal broken-up finely, and old decayed cow dung, taking the precaution to kill all worms and insects. Give good drainage, cover it with a layer of turfy peat, and fill-up with compost, just covering the bulb, and pack the soil round it. Give a gentle watering just to settle the soil, and plunge the pots in cocoa-nut fibre refuse, temperature about  $65^{\circ}$  to begin with. Great care is required not to saturate the soil with water, but let it be given according to growth. I usually place a bell-glass over mine, it adds greatly to the beauty of the foliage, and when they have reached their full vigour take it off. They require shade during the hot sunny part of the day. Frequently give them liquid manure, they like it and make a splendid growth. I grow mine in a temperature of  $80^{\circ}$  to  $85^{\circ}$ .

*Alocasia metallica*, a native of Borneo, requires a compost of very rough fibrous peat mixed with a little well-decayed leaf mould, and a plentiful supply of sharp silver sand. The pots should be well drained, for although this plant likes to be freely watered whilst it is growing rapidly, yet nothing is so injurious to it as water stagnating about the roots. While young it should be grown under a hand-glass with the pots plunged in a bottom heat of about  $80^{\circ}$ . The atmosphere in which it is grown should be kept very moist, especially during spring and early summer. It must be shaded from direct sunshine.—F. P. LUCKHURST.

DR. HOGG GRAPE.—I was very pleased on reading the account given by "J. W. O." of this fine new white Grape (see page 53).

The results there stated as being the produce of what is generally termed a planting cane grown in a 10-inch pot are a sufficient guarantee of the good properties of this variety. At any rate, the weight (8½ lbs.), and quality considered worthy of being placed on an exhibition table, are enough to stamp Dr. Hogg Grape as one of the best recent introductions, and one which I think Mr. Pearson, of Chilwell, has great reason to be proud of bringing before the public.

From the description given by "J. W. O.," it is quite evident that we may expect something from the variety in question when stronger Vines are grown. I was appointed one of the judges at a local show, and there, for the first time, saw this splendid Grape. On turning to my note-book I find that the dish of Dr. Hogg received the highest number of points given for White Grapes, with the following remarks:—Bunches 12 inches long, tapering; berries well set, of good size and excellent flavour. If "J. W. O." will allow me to take away the latter initial, and substitute Osberton in its place, I think it would have more influence with the readers of *THE JOURNAL OF HORTICULTURE*. I am led to make the above observation by the fact that the Grapes which came under my notice were products from those noted gardens, of which I think ere long we shall hear more in the way of Grapo and other fruit-growing. —JOSH. JEFFERSON, *Carlton House Gardens, Worksep.*

### THE APPLE, AND HOW TO PRUNE AND TRAIN IT.

WHAT is "to prune?" To prune is to cut off or otherwise sever a limb or branch of a tree, and the object sought to be obtained thereby is the regulation of the vegetation of the plant. In the pruning of fruit trees we have a double object in view—first, the formation of the plant whilst in its young and growing state, according to some pre-arranged style or form; and secondly, inducing that plant to produce good crops of fruit. The treatment required for the one is necessarily quite distinct from that needful for the attainment of the other object, and will therefore be considered separately.

In pruning as applied to training, it may in the first place be remarked that the immediate effect of pruning or the cutting-off of any portion of a plant is the concentration of a greater supply of sap in the parts that are left—that is, the sap when it commences to flow, instead of having to be spread over the whole, is then all concentrated in the parts that are left. Hence by pruning we secure greater vigour and a stronger growth. This is more immediately applicable to winter pruning, or pruning after active vegetation has ceased. The result of all such pruning, it may be repeated, is to produce greater vigour. In this way, therefore, are we able to regulate by judicious pruning the growth of our trees. Be it understood that these remarks on pruning refer to cutting to buds that are in a condition to put forth shoots, and not to the amputation of limbs, as may be at times necessary as well. Bearing this in mind, therefore, it is apparent that if we want a particular tree or shoot to grow strongly we ought to prune it severely, and if a weak growth only is required then our pruning has to be reversed. Let us take, for example, two shoots on the same tree of the same season's growth, the one several feet in length and strong like a Willow, the other a weakly shoot of a few inches. The ordinary and natural plan is to cut the strong shoot back to the same length as the weaker, which is not pruned at all. This at the time of pruning gives the tree a uniform sort of appearance, but it is altogether wrong and extremely injurious. The weaker shoot should be pruned back so as to compress its forces on a few buds and induce it to put forth a stronger shoot, which it will assuredly do; and the strong shoot should be left at nearly its entire length, and, its forces being spread over many buds, it naturally breaks more weakly. In this way, by judicious pruning, we are able to encourage or repress the growths of our trees almost at pleasure, and so train or mould our trees to whatever particular shape or form our fancy may direct.

We prune our fruit trees in the first place for the training or formation of the plant, and we so train or form our fruit trees that they shall produce fruit. Now, it is of paramount importance in the production of a full crop of fruit that all the component parts of the tree be of equal constitution and vigour. If one shoot or branch be weak and the other strong, the whole strength in a short time, unless checked by judicious pruning, is absorbed by the strong shoot, and the result is not only an irregular but an unfruitful tree. The importance of pruning, therefore, as regards training is not

simply the ultimate form of the plant, but so to guide or direct its forces that the whole shall be equally distributed over every part of the tree.

To make my remarks and instructions clearly understood I shall give illustrations of the more particular acts of pruning and training at present practised.

Fig. 1 may be taken to represent a young or dwarf maiden Apple tree as it is called, just as it may be received from the nursery. It is the fashion now in this fast-living age to plant maiden fruit trees—i.e., one-year-old grafted trees, that have made only one growth from the bud or graft, and have not been pruned or manipulated upon in any way by the nurseryman. We plant such trees now, and have them in bearing long before it was even dreamed of sending them out of the nursery a few years ago. The fashion was to have trained trees and "cut-backs" so many times, in the belief that no one out of a nursery could perform such an action, I propose to explain all this from the beginning.

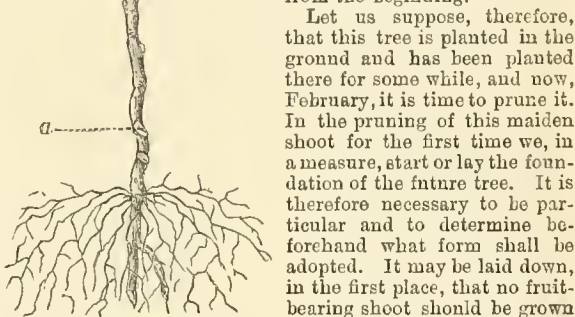


Fig. 1.—Maiden Apple tree as received from the nursery, showing the first cut in pruning. a, Graft.

lower than 9 inches from the ground, but this can be varied if required. In pruning, therefore, for a low bush form we should prune to the third bud above the 9 inches, or above the mark where we wish the lowest

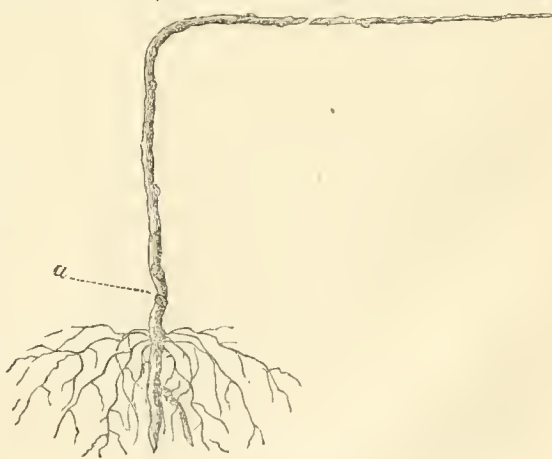


Fig. 2.—Pruned as intended for a single cordon, two-thirds of its length. a, Graft.

branch to come from. From this cut we obtain three shoots all of about equal strength, which form the groundwork of the future bush. For a pyramid tree the same style of pruning is required, or perhaps, if the tree is strong, some five buds may be left beyond the lowest limit, the top bud in this case

producing the leading shoot, which being trained erect grows stronger than the other side shoots. We then have one leading shoot and four side shoots produced as the result of the first season's pruning. It is no matter what the strength of the stem may be, it must be cut down to the point stated in order to secure the branches or side shoots at the proper place. We can only, at this stage, depend upon four or five of the buds breaking, prune it where you will. If the stem is pruned at 3 feet from the ground the top five eyes only would break, and the lowest branch would then be 2 feet 6 inches from the ground.

Fig. 2 represents the pruning of a maiden tree for the formation of a single cordon. This may, of course, be trained either horizontally as represented, or upright. In this case no side shoots or branches are required, only buds for the formation of fruiting spurs; and so we are enabled to leave the stem at double the length, the top bud being the only one required to form a shoot.—B.

### THE POTATO DISEASE.

AFTER reading the report of the Judges, and their reasons for not adjudicating Lord Cathcart's prize to any of the ninety-four essayists competing, I think with Mr. Luckhurst (page 72) that they arrived at a most lame and impotent conclusion. There would, no doubt, be a great sameness in the different essays, both in the theories advanced and in the practical suggestions made to prevent the disease; but there must have been something worthy of publishing in the Society's Journal amongst the twenty-three selected essays, if not eligible for the prize.

In their Report the Judges say that the ninety-four essayists "generally consider it sufficient to assign a cause and a mode of prevention of the Potato disease, without giving any scientifically accurate theory of their proposed remedy, or sufficient experimental proof of the accuracy of their statements." Now, if some of the essayists have described what they believe to be the cause of the disease, and have likewise given a mode for its prevention, surely the lapse of more than twenty years is a sufficient proof that their theories and remedies have had time to be exploded if not accurate, and one of the conditions was that all prize essays shall be founded on experience or observation. No doubt some of the theories as to the cause of the disease and the practical suggestions as to its prevention made in these essays have been familiar to agriculturists and horticulturists previously, but if they have stood the test of practical experience so long they must be the best hitherto revealed, and the safest to rely on.

Another portion of the Report says, "As regards the botanical part of the subject, it must be confessed that all the essayists appear to be in the arrears of the present state of scientific knowledge." From this extract it seems that all the essayists were regarded by the Judges as not being up to the present standard of good botanists; but that botany has had much to do with the discoveries of the cause of the disease is doubtful, and the present state of scientific knowledge has as yet added very little to our knowledge concerning it.

The recommendation of the Judges to apply the £100-prize to some competent mycologist, so as to induce him to undertake the investigation of the life history of the *Peronospora infestans*, or Potato fungus, will if followed lead to no result. The life histories of the mildews or fungi which attack the foliage of the Pea and Turnip in dry warm autumns, and the Vine in spring and summer, must be known to mycologists before this; but despite the cures tried, the fungi regularly appear in the years when the weather is favourable for their development, and so it will be with the Potato fungus.

The recommendation of the Judges likewise to award valuable prizes for the best disease-proof early and late Potatoes is another ridiculous portion of their Report. These prizes are not to be awarded till after a three-years trial of the Potatoes entered, and they are to resist the disease, and must, besides, be of good cropping, keeping, and cooking qualities. The three-years trials will be so much time lost; for it will be found that none of the early and second early varieties are disease-proof, being only so when ripened in July and the beginning of August, before it usually appears. Even if some of the sorts escaped in a dry season, or in localities with a dry soil, they might become diseased in other unfavourable soils or seasons. As to the late varieties, it is only a few with thick, leathery, red skins, and strong woody haulm, that resist the disease the most, but they are not proof against it on

some soils, and cultivators of them knew as much already about them as will be learned after a three-years trial. The handsome prizes to be offered for disease-proof sorts, to be raised from Potato plums, will, doubtless, be intended for seedlings of this section; but as it will be the spring of 1879 before the competition commences, the Potato beetle will be here by that time from America, and be a new enemy to conquer.—W. T.

WHAT Mr. Luckhurst says of blight-proof Potatoes being a fallacy, at least at present, is quite true; also that it would be a costly remedy for the Potato farmers of Lincolnshire and adjoining counties to discard old sorts for new. They have done so to a very great extent; Victorias, American Rose, and Regenta fresh from Scotland being very largely grown; but I fear that though there is nothing like a change of seed for a crop, the result has not been to show much diminution of disease, especially in 1872. Mr. Luckhurst's opinion appears to differ from that of some of our new raisers as regards where we are to look for the remedy—viz., between the early and late sorts. In 1872 my Ashleaf, American Rose, Shaws, Nonpareils, and other early varieties were nearly annihilated, scarcely producing enough for seed, while Sutton's Flourballs kept growing till October with scarcely a tithe bad, the quality being what I once heard an Irishman describe as "buthery." Certainly some other late red sorts seem to have more power to withstand the disease than any early ones, from which I augur that some good late sort may yet be raised that will altogether resist it. I do not think that the disease is due to degeneration, for many of our recently-raised sorts are quite equal, if not superior in size, quantity, and quality, to any of their ancestors, and Potatoes grow as vigorously now as ever they did, these being the points in which degeneracy first shows itself. But we must first find what the disease really is before we find the antidote.—JOHN PLATT, *Gardener, Hillington Hall, Lynn.*

### THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 15.

MUCH that has been written of late years on the subject of Nature's mimicry, as it is called, appears to me to savour of the imaginative. No doubt there are protective resemblances traceable between some insects and the plants or other substances upon which they feed, or to which they resort. What has brought this forward more prominently is the circumstance that the upholders of the theory of evolution press certain of these instances into their service. After acknowledging that they are unable to explain the conditions under which a change in some species originated, they believe that by "natural selection" a mimicry occurring at first in but one, or at least in a few individuals, led the way to the development of a new type, and the continuance of that was insured by its close resemblance to an object which would protect it from danger. Now, it is quite evident that all these resemblances are not protective, and even those that are seemingly so have not quite the value sometimes assigned to them, curious and often beautiful as they are. Thus the large moth known as the "Red Underwing," sitting on the grey trunks of the Willows, with the under wings concealed from view, may be easily passed unobserved, yet it will not unfrequently sit on a tarred paling, or on a trunk or branch that has lost the bark, and then be visible enough. Mr. T. W. Wood asserts that butterflies have, in some instances, after they have gone into the pupa state, a peculiar sensitiveness of skin, so that the insect takes just the colour of the object to which the pupa is attached, very much as a photographic plate catches an image. He gives the common Nettle Butterfly (*Vanessa Urticae*) as an example, and tells us that the pupæ are of a greenish hue when attached to the Nettle leaves or stems, and more or less brownish if secured to palings and walls. Other entomologists have not found this exactness, and further observations appear needless ere it can be regarded as a fact. It is at least singular that Mr. Newman, whose knowledge of British butterflies is equalled by few, makes no allusion to so striking a peculiarity in his work on these insects. May not the truth be that we are going from one extreme to the other in the matter of natural resemblances? Our forefathers called these things simply "freaks of Nature;" we want to produce a "cut-and-dried" explanation of the reason of each, and with all our research must sometimes fail.

Hoping the reader will pardon this large introduction to a

rather small moth, I introduce a species commonly known as the Marbled Beauty (*Bryophila perla*), which is frequently to be seen sitting on garden walls towards the close of the summer. So nearly does the insect often resemble the wall when it is greenish white or grey with lichens, that I have observed persons be so close to the wall as to place a finger on it close to one of these moths, and yet not see the insect, which does not readily take fright. Nor does it soon catch the eye when resting on a paling, though if on a brick wall, if the usual colour, it is soon noticed. The wings, of a very light grey, have markings of a darker grey, many specimens, however, being found with the ground colour much darker, either greenish or brown—of course, according to the views of certain theorists these are intended to sit on dark-hued walls. At the base of the wing is a dark blotch, and beyond that a white bar; what are called the discoidal spots are large and irregular, and the fringe of the wings is prettily spotted with black and grey.

These little creatures are no wanderers, seemingly, from the home in which they have been reared; their life as larvæ and pupæ is passed upon the wall where we find the moths, and the latter seldom fly to any distance; indeed, I have never seen one take wing unless forced by alarm, when it can fly rapidly enough, yet settling again at the first convenient spot. It is worth anyone's while, in spring or early summer, to go to a wall on which he has seen the perfect insect and examine the crevices for the abodes of the larvæ. They emerge in the autumn from the eggs which have been deposited by their parents among the flat lichens so common on walls and buildings, and after feeding a little they hide themselves in crannies, to remain inactive during the cold and wet season, each one, hermit-like, making arrangements to live alone, yet not exactly solitary, as his brethren of the same brood are all about him. Upon the arrival of the first mild days of spring these larvæ begin to feed again, always preferring those lichens that are saturated with moisture, and therefore usually engaged upon their food at morning and evening. Through the day they mostly rest in their cocoons, for even when larger they still follow the same habit of forming abodes of silk mingled with particles of mortar or moss, or perhaps with brickdust gnawed off the bricks by the busy jaws of the larvæ, as was observed by the late Mr. Rennie. They are often in crevices, or, if not, still so ingeniously made to resemble the wall, that it needs a little patience to discover them; and hence it appears that each time one of these larvæ leaves its abode it has to make a hole therein, the same being carefully closed again on its return.

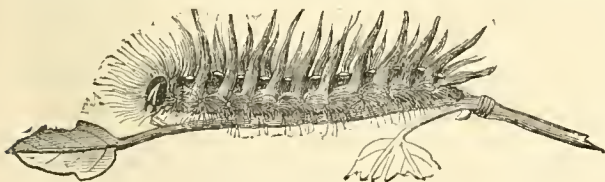


Fig. 1.—Larva of *Acronycta Aceris*.\*

Mr. Newman, writing of the habits of the larvæ of a species of the same genus, and closely resembling the Marbled Beauty, though not so generally distributed throughout England—namely, the Marbled Green (*Bryophila glandifera*), has stated as follows:—"It is curious, and rather opposed to the ordinary habits of insects in this respect, that, as a general rule, each caterpillar is totally careless whether he return to his own dwelling-place or to that of some relation; he will, without a moment's hesitation, coolly possess himself of any tenement he finds unoccupied, and, carefully closing the entrance, maintain his position against all comers. Supposing, however, that the tenement he examines, with a view of taking possession, be already occupied, he never presumes to intrude, never thinks of contesting the point, but continues to wander about on the look-out for a house until he finds one unoccupied; in no instance do two caterpillars attempt to occupy the same dwelling as tenants in common. Should a difficulty arise in finding an empty house, which not unfrequently happens, the caterpillar sets to work in the most contented manner to construct one."

The proceedings of *B. perla* are somewhat similar, and it is also observable in both species that the larvæ are reluctant to stir out in dry weather, and should it be long-continued, some of them die in their houses from starvation. The full-grown

larva is of a bluish or slaty colour above, with some irregular orange markings along the sides of the body; the legs and the under sides are green; the head is blackish and shining. Being mature, it then forms another cocoon, in which it becomes a pupa or chrysalis. A succession of the moths is to be seen most years, during about two months, in July, August, or September.

The cocoons of the moth bearing the Latin designation of *Acronycta Aceris* (see figs. 1, 2, and 3), and the English of the Sycamore Dagger, are to be found among garden rubbish near the roots of trees, and also on palings, for the larva has rather a propensity for wandering after it has ceased eating, and does not, as a rule, spin-up close to where it has been feeding.



Fig. 2.—Larva of *Acronycta Aceris*.\*

One cause of its peregrinations are the high winds which sometimes prevail in autumn, and as this caterpillar is most partial to the higher branches of the Sycamore and Horse Chestnut, it is apt to lose its grasp and come to the ground with a sudden thud, rarely, however, seeming much the worse for its fall, owing to the protective coating of hairs. I have had this insect shown to me by gardeners as something remarkable, and certainly its aspect does distinguish it amongst hairy caterpillars, and it may claim the epithet "beautiful," while it is never common enough on those trees which furnish it with food to be deemed in any way an injurious insect.

The body of the caterpillar is flesh-coloured, but the most

characteristic peculiarity it has is a row of lozenge-shaped white spots along the back, eight of these having a velvety black edging. On each side, also, there are a series of pencils or brushes of orange-coloured hairs, while the black head has on it a white mark having



Fig. 3.—Larva of *Acronycta Aceris* taken out of its cocoon.\*

a resemblance to the letter V. This caterpillar, which is about in August and September, if alarmed, at once rolls itself into a ring, the head, however, not being within the ring, as with some other caterpillars that resort to this mode of defence. I have never found the larvæ of this species make any attempt to bite, as do some of those belonging to the family of the "Daggers," though their jaws can scarcely penetrate the human skin. No doubt the hairs serve to protect the larva very effectively from the attacks of most birds.

The illustrious Réaumur repeatedly watched the larvæ of *A. Aceris* while engaged in forming their cocoons, and he perceived that by the time the task is finished they are almost entirely bare, the hairs being introduced at intervals among the silk. With his usual accuracy he notes the fact that though a larva pulled out the hairs in tufts, these were afterwards subdivided and distributed in smaller parcels, each being not simply entangled in the cocoon already partly spun, but secured by added threads. Quoting this account, Figuer, in his work on insects, remarks that "the operation must, without doubt, be painful to the poor animal." As to that effect, however, I hardly think we can speak so positively; the hairs mingled with the silk do certainly serve as a protection from the variable weather through which the pupa has to exist for eight or nine months. The Sycamore Dagger moth has gray wings dotted and streaked with black, specimens occasionally turning-up in which all the wings are of a dingy shade of brown.—J. R. S. C.

#### MRS. PINCE'S BLACK MUSCAT—GROWTH OF YOUNG VINES.

I HAVE seen nothing to cause me to suppose that there are two Grapes in cultivation under the name of Mrs. Pince's

\* From Messrs. Cassell's edition of Figuer's "Insect World."

Black Muscat. It is far more likely that there is a right and wrong method of culture, and, as is usually the case, the majority of us have followed the wrong one. It will be interesting to note the effect of such alterations of treatment as the experience of the past season may suggest.

Permit me to remind Mr. Inglis that the canes of 25 feet long were produced by young Vines in about four months after they were planted, and as the tips of the canes were by that time nearer the bottom than the top of the back wall of the vinery, the eyes upon that part growing upon the trellis sustained no harm, but rather derived much benefit from the unchecked growth.

There can be no doubt that much mischief is occasioned by an indiscriminate application of the doctrine of close-pinching. Far better would it be not to touch any part of a Vine during the first season of growth in its permanent position, than to pinch and train with the precision that is so often practised. Let the roots and branches ramble as they may, we want no fruit, but growth that is lusty, stout, and strong, to establish the Vine, to impart to it a vigorous constitution, and thus lay the foundation of healthy and fruitful existence. It may be well to quote a case in point. Among a batch of forty or fifty Vines that once came into my hands to be planted in a new range of vineries, was a Black Hamburg of so weakly a condition that it was first of all put aside as useless, but as the roots proved to be healthy and the slender cane well ripened, I determined to afford it a corner. It was, therefore, pruned to within 2 feet of its base, and instead of being pinched like its more sturdy neighbours every shoot was encouraged to grow. The result obtained was remarkable and conclusive, for this weakly plant actually yielded four or five canes that were larger than many of the single canes of the, at one time, more vigorous Vines.—EDWARD LUCKHURST.

### MY SEED ORDERS—A RETROSPECT.

It is nearly twenty years since I first made out a seed order. I had then become "head man." How I had longed for the time, and promised myself what wonderful things I would do! I felt sure that I was in advance of the times, and would show how to strike out of the rusty old grooves that my hard-headed, grey-haired chief had moved in. To be sure, he was safe, there was no getting over that; but then what was it? Why, only the same things over again. True, we had always plenty of roots, and vegetables, and herbs. Onions never failed—no, never; but then we had only two sorts—summer and winter Onions; and at the same time we young fellows knew very well that they were nowhere amongst the new kinds—out of date, and would do very well for cottage gardens; but something different was wanted in a nobleman's place, such as more sorts to "follow one another," and not sticking to the common *6d.*-an-ounce things. And then the Beet—just the same one old sort. Of course, there was no complaint of colour or flavour; but then his lordship did not know what good Beet was—had only had this "old thing" all his life, which was not right, considering the splendid new sorts he ought to enjoy. We would have five or six sorts to "follow one another." Of course, that was the proper thing to do.

And then Lettuce. Just two sorts of that again, and only two. Such as it was we could always cut, summer and winter—indeed, it was one of the prizes of our practical Yorkshire chief, as he said, "Nivver to be wihoot sallat." "Follow one another" the Lettuces certainly did by the surplus plants running to seed. But what waste! and how short-sighted not to grow all the new sorts which could hardly be made to run at all, the reason, as everybody knew, that seed was so dear! What better proof could anyone desire than that? And then their "nutty" flavour—what a treat it would be to his lordship, our sorts tasting of plain Lettuce, and nothing else! But his time would go and ours come, and we would then show the difference between fogeydom and progress.

Worst of all, however, were the Peas. I am afraid it made our blood crawl when we thought about it; and we were almost ashamed to admit the fact that in a fine four-acre garden were only three or, at the most, four sorts relied on to supply the regular great demand. It is true a few odd pints of new ones were obtained for trial now and then, and everybody could see their superiority but the "old fossil;" and then the three great bags would come as usual marked Early Frame, Champion of England, and Ne Plus Ultra, with a few quarts over of British Queen. Early Frame we knew was a long way in arrears as the times went, the new ones being a week or

ten days in advance, and we actually labelled it the "Old Snail;" and in the following May, and as if to make us ashamed of ourselves, the "Old Snail" gave us a good dish on the 18th day in the north of England, and it was seldom that it was after the 25th that we had to wait for a peck. Champion of England we had a little more respect for, it being in Bendigo's time, who had the "oracle of the ring" in the bothy, otherwise it was druidical, and not what the nineteenth-century Peas had come to. "Ne Plus" was very well; but row after row was surfeiting. We liked British Queen better, being so much sweeter to eat out of the pods as we gathered. No doubt we had an abundance of Peas to gather every day from May until severe frost set in; but then having the same old sorts over again was unbearable, and I think we added unprofessional. In a garden like that we would have fifteen or twenty varieties to "follow one another," and his lordship should have "the best" instead of being kept to the common ones year after year. The old chief had a regular crotchet about his Peas; and if he could not get the first sowing in on the 5th of November, not many things on the place were right, nor people either. On the arrival of this day we knew the order—it was probably forty years old. This was it exactly: "Na, lads, lets ha t'Peas in—it's t'tift agean. Git all t'labels written—three Frames, seven Champions, five Ne Plus, and one Queen, and that'll do for t'season. Av nivver been wihoot Peas i'all ma time, an' ha nivver sal be sticking to t'old sorts an sixteen savings."

Cauliflowers (including Broccoli) we had, in those days, "all the year round;" and of both put together we had never more than half a dozen what we called "paltry old sorts." Of Cabbage we had the ridiculous number of two, one of which has vanished off the face of the earth—no, catalogues—by its old name of Carver's Early. We thought it ought to have done that years ago. True, the old sloth would be ready to cut as soon as the Brussels Sprouts were over, but we knew the new ones were much faster than that; and how he should pet it by planting in a wood for seed three miles away from any of its congeners, we could never understand. We knew very well his object, because, as he said, "he muddent hev seed 'smittled,' as he sud nivver git another like it;" but that an old thing like that should be worth all the trouble was a mystery we could not fathom. Then we never grew anybody's "Fern-leaved" Parsley as we ought to have done. Certainly, we were never known to be short of a handful, and never heard the cook grumble once, but that was because she knew no better, and we longed to teach her what first-class Parsley really was.

At length the old chief was called to his fathers, full of years and honours, and never had the writer—he knows it now—a more trusty friend nor a more safe and reliable teacher, or his lordship a more competent and faithful servant. His motto was, "A few things and good to depend on, and of these a strong lot;" while for fancy it may be summed-up, "As many as you like, but not much of each." That was an old man's counsel. Let us test it.

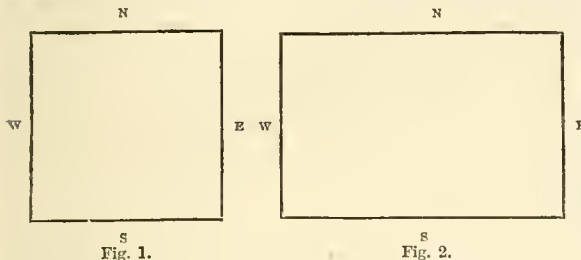
As this, however, may stretch my letter to an inordinate length, I think I had better defer it till next week. In the meantime let me not be prematurely dubbed an old fogey prejudiced against all improvement, and an enemy to further research and further effort in any direction tending to advance horticulture, and to add to the benefits, pleasure, and interest of which it is an inexhaustible source. No; if I have read the Journal for over twenty years, and hope to enjoy the same pleasure over twenty more, I cannot admit myself an old fogey yet, but had rather be yeleft.—AN OLD FRIEND.

### THE KITCHEN GARDEN.—No. 5.

It may be asked, What is the most desirable shape for a walled-in garden? I will endeavour to answer the question, though in doing so I may be unable to advance anything beyond that which practice has already taught most of us. The majority of those concerned know that a garden is walled-in for the purpose of not only securing increased warmth for the cultivation of early vegetables, but also, and principally, to afford a home for those tender and choice fruits which will not arrive at perfection without greater protection and heat than can be secured in the open ground. To prolong the ripening of some fruits and to hasten that of others are objects likewise to be considered. Although various forms have been advocated, not more than three or four can be recommended to the notice of those about to make a garden. There are gardens, it is true, of various irregular shapes; but as these result from the

inability to adopt a more desirable shape I shall not dwell on them, but will give outlines of those forms mostly adopted, and which the amateur will find can be easily applied to his limited scope.

Fig. 1 represents a square with the walls at right angles, the four cardinal points of the compass being indicated, as in the other figures, by the letters N, S, E, W. Beyond the northern aspect, which is the least important, there are three other direct and most important aspects—viz., south, east, and west, of equal lengths. Now, as the sun travels from east to west, and the north wall faces due south, this will be exposed to the full force of the sun at mid-day, and the sun will play on the east aspect up to that time, and afterwards on the west. Before leaving fig. 1 I may say it is sometimes better to alter the aspect a little according to the climate of the locality; for in 1860, when I had access to Thompson's "Gardener's Assistant," I made two or three extracts from it, which I will quote. In reference to this he says, "In the warm parts of Britain the wall on the north side should face the sun at 11 A.M., and the walls on the east and west sides should run parallel to each other and proceed at right angles from the wall on the north side. Where the climate is not quite so good the wall on the north side may face direct south, with east and west walls at right angles to it." If the garden is made of an oblong shape,



as shown in fig. 2, the southern aspect is considerably increased, and the east and west walls reduced. Gardens of such a shape are convenient, and often more suitable than any other. In colder localities such an addition to the southern aspect is very desirable.

I come now to fig. 3, which gives, besides a north and west wall, one that faces the sun an hour or two before mid-day. The chief object in this is not only to vary the southern aspect, but its position allows the sun to shine on the opposite side of the wall—that is, the north-west side, for an hour or two before it sets; but it is not a form that would commend itself for any other reason, and in squaring-off the quarters and borders there is a little waste of ground, as well as two or three triangular pieces, which are always awkward to cross.

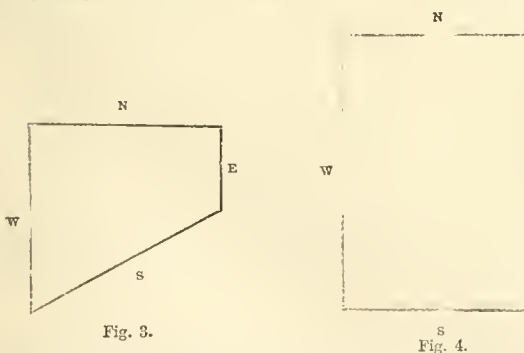


Fig. 4 is the same as fig. 2, only running direct north and south. Here the north and south walls or aspects are much reduced, and the east and west aspects of considerable extent. Gardens belonging to villa residences near towns are often of this shape, perhaps from the fact that they are easily formed, and there is no waste of space in laying out the ground. Narrow slips like these, if favourably situated, are about the best that could be chosen; but when a large piece of ground is enclosed in this way, the only means of increasing the southern aspect is to carry a wall across the centre from east to west; but for small plots it would not be a wise plan to do so, as the wall would take up room and shade the ground on its north side.

Considering the various points in favour of gardens of different forms, there appear to be none which would meet with such favour as a square or an oblong; for besides affording the most desirable aspects, there is economy in their construction and arrangement as well as in the after-management, and by very little contrivance they can be made to appear as ornamental as any other fancy form that can be devised with due regard to the necessary aspects for the cultivation of fruits. I therefore think I shall not be wrong in choosing the four figures I have given for my future remarks; and whatever may be omitted or not understood in this paper will, I trust, be brought out more plainly in subsequent articles.—THOMAS RECORD.

## ROYAL HORTICULTURAL SOCIETY.

LORD ALFRED CHURCHILL has sent for publication the following reply to the letter from Mr. W. A. Lindsay on the proxy question, which appeared in our last issue:—

"16, Rutland Gate, S.W., January 27, 1874.

"SIR,—In his letter, published in your impression of the 29th ult., Mr. W. A. Lindsay stigmatises as untrue the three following statements in the circular letter recently issued by Mr. Bateman, myself, and others.

"(1) That the Council of the Society have set the body of the Fellows at defiance in the question of voting by proxy.

"(2) That the same Council represent only the interests of the Fellows residing in the immediate neighbourhood of the Gardens.

"(3) That the same Council neglected to call the special general meeting of the Society for the purpose of considering the question of proxy-voting until after the time when it ought legally to have been called.

"The first of these statements may perhaps be considered a matter of opinion. A meeting of the Fellows was specially held for the purpose of considering a proposition to extend the power of voting by proxy to all Fellows of the Society. The meeting affirmed this proposition by an overwhelming majority. The Chairman then announced that the Council were not legally bound to carry out the desire of the Fellows, that they would take such steps as they might think proper, and would communicate them to the Fellows when they chose.

"In fear, apparently, of another resolution being brought forward in consequence of his announcement, the Chairman abruptly dissolved the meeting without even waiting for the customary vote of thanks. The Council have since taken no step to carry out the wishes of the Fellows. Whether they can be said to have set the Fellows at defiance is a matter of opinion.

"As regards the second of the statements objected to by Mr. Lindsay, it is a matter of public notoriety; and if Mr. Lindsay and his colleagues think otherwise, the sooner they are undeceived the better. Everyone in the Society knows that the old Council of the Society were disgusted into quitting their office last March by a vote of want of confidence, sprung upon them by a faction of the Fellows residing near the Gardens, who were dissatisfied because the old Council refused to make the interests of horticulture subservient to the wishes of that faction.

"The third statement objected to by Mr. Lindsay is fortunately a matter of arithmetic, and can be easily disposed of.

"By bye-law 50 of the Society, the Council are bound to summon a general meeting within twenty-one days from the receipt of a requisition signed by twelve Fellows. The necessary notice was posted on December 2; the latest day, therefore, for which the Council should have summoned the meeting was December 21. The Council delayed the meeting until the 8th instant.

"I am, sir, your obedient servant,  
"ALFRED S. CHURCHILL."

*The Royal Horticultural Society as it is and as it might be. In some letters, by G. F. WILSON, F.R.S.*—This is a reprint of various letters Mr. Wilson has written on the lamentable state of the Society, and which had previously appeared in various horticultural periodicals.

## ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE first meeting of the year was held at Burlington House on the 5th January, Professor Westwood, President, in the chair. Mr. Meldola exhibited a series of photographs of highly magnified insects taken by the microscope and camera obscura, and the President stated that a work had been some years ago published in Austria, in which the beautifully variegated wings of the Tephrites were represented of an enlarged size in the same manner. Mr. McLachlan called attention to a paper contained in the last part of the French Entomological Society's Annals, by Messrs. Bar & Laboulbène, on a South American species of Moth (*Palustris Laboulbenei*) closely allied to our Satin Moth, but of very extraordinary habits, the larva being aquatic, living in the canals of the Sugar plantations in Cayenne.

and feeding upon an aquatic plant. The caterpillar is very hairy, and the supply of air necessary for its support was apparently entangled in its hairs, the larva breathing, in the usual manner of caterpillars, by means of small spiracles along the sides of the body.

The President gave an account of a small mass of cocoons recently found attached to a pot in which a Rose tree was growing, and which on being opened were found to contain caterpillars of the common Yellow-tail Moth, not more than a quarter grown; the cocoons, therefore, were only their winter quarters, and not the ordinary cocoons of the chrysalis. It was stated that the larvæ of the Satin Moth also spin cocoons in which they pass the winter gregariously. Mr. Stainton had likewise noticed that the larvæ of *Nepticula* were gregarious in the young state. Mr. Butler called attention to a memoir by Mr. Riley, the State entomologist of Missouri, U.S., on the American species of butterflies of the genus *Apatura*, and on the curious manner in which the chrysalis, instead of being suspended by the tail, is fixed against its support. A letter from M. Olivier was read, stating that he had recently come into possession of a portion of the collection of his grandfather, the celebrated French coleopterist, which was in good condition, and which he should be happy to exhibit to any entomologist who might be desirous of verifying the Olivierian types. Unfortunately the *Carabidæ* and *Longicornus* were lost.

Mr. F. Smith read a monograph on the wood-boring bees of the genus *Xylocopa*, and Dr. Sharp read descriptions of the *Pselaphidæ* and *Scydmonidæ* collected by Mr. Lewis in Japan.

The anniversary meeting of this Society was held on the 26th January, at Burlington House, the President being in the chair, when reports from the Council were read showing the satisfactory state of the Society, and especially commenting on the great value of the memoirs published in its Transactions during the past year. An address was also delivered by the retiring President on the recent progress of the science, which was ordered to be printed. On a ballot the following gentlemen were elected officers of the Society: Sir Sidney S. Saunders, President; R. McLachlan, Esq., Treasurer; Messrs. Grut and Verrall, Secretaries; and Mr. Janson, Librarian; and Messrs. Boyd, Dunning, F. Moore, and Meldola were elected into the Council.

### MILDNESS OF THE WINTER IN EAST LOTHIAN.

I SEND you herewith a bloom of Sweet Pea picked to-day (January 30th), in the garden of Mr. Dods, farmer at Congalton near North Berwick, where a patch of mixed Sweet Peas has been growing and flowering all winter, intertwined in a large bush of the common China Rose, which is thickly furnished with blowing and full-blown Roses; and both have afforded supplies of cut flowers up to this date. Here also a fine plant of Sweet Bay is now thickly covered with swollen flower buds, and the *Laurustinus* is clothed almost to snowy whiteness with fully expanded floral corymbs; these two, as well as the *Alexandrian Laurel*, being seemingly as luxuriant in growth as if they were in their native climes of Southern Europe and North Africa. In the surrounding fields and waste places many common weeds are flowering and seeding as freely as at mid-summer, such as the common Sow-thistle and purple *Lamium*, of which sprigs are enclosed; as also the common annual *Fumitory*, Annual Meadow-grass, Chickweed, Groundsel, and many others.

In the pastures the Daisies with "their snawy bosoms sunward spread" contrast beautifully with the verdant grassy herbage. There also Buttercups occasionally show their golden heads. By the roadsides Dandelions are by no means unfrequent; while under the hedges those in some parts favourite spinaceous esculents, the common Nettle and Robin-run-the-hedge, are sufficiently advanced to be gathered for culinary purposes.

In the fields the Swedish Turnips and such of the few rough-leaved sorts that still remain are rapidly starting up to flower. Young grass almost entirely conceals the stubble of last year, and in many of the warmer-lying fields it already assumes the appearance of "windrolling" when passed over by gentle breezes. In the orchards the expanding yellowish buds of Pear trees are conspicuous; and still more, in the woods are the golden buds of the Balsam Poplar, and the silvery ones of the earlier Willows, the "siller saughs wi' downy buds" of Burns.

Congalton is on a low south-lying slope of that trap rock district in the north-east portion of the county which culminates in North Berwick Law, the Bass Rock, and other less

important eminences, and which is bounded on the east and north by the German Ocean and the broad estuary of the Frith of Forth. In its immediate vicinity "snabs," or small hillocks of trap, are frequently protruded, upon many of which the pretty Maiden Pink, *Dianthus deltoides*, is remarkably abundant; and the Crow Garlic is so common that its root-bulbs, as well as compact cone-like heads of small bulbels, are gathered for stewing and pickling.—WILLIAM GORRIE, *Edinburgh*.

### AGRICULTURAL RETURNS OF GREAT BRITAIN FOR 1873.

THE following are extracts from the Report of the Chief of the Statistical Department of the Board of Trade:—

As the prevalence of allotments is a subject of interest in connection with questions relating to the condition of agricultural labourers and artisans, the inquiry as to allotments was renewed in the present year, and made, as far as practicable, to extend to all garden allotments detached from the houses of agricultural labourers and artisans.

The return shows there were in 1873 as many as 246,000 allotments of land in Great Britain, of which 242,000 were in England, 1700 in Wales, and 2100 in Scotland. The practice of letting land in small allotments detached from cottages is not nearly so common in Wales and Scotland as in England; and even in England, as will be seen by the table of allotments in each county, allotments are comparatively few in the northern districts. Differences in rates of wages and of local agricultural customs affecting the support of the labourers, as well as in the number of small holdings above the size of allotments, are no doubt some of the causes that make garden allotments more or less numerous in different parts of the country.

The total extent of land let in garden allotments in Great Britain in 1873 was 59,631 acres, which shows almost exactly an average of one-quarter of an acre for each allotment, and the average for England is the same. The average size of allotments varies, however, in the different English counties. In twenty-four counties, in which there were altogether 122,000 allotments, the average size may be said to vary from one-eighth to one-quarter of an acre. In eighteen counties, in which there were altogether 120,000 allotments, the average size may be said to vary from one-quarter to one-half of an acre. One-eighth of an acre is the quantity of land usually considered as much as can be thoroughly cultivated by an employed agricultural labourer in his spare time.

The extent of arable or grass land used for fruit trees of any kind in Great Britain in 1873 was returned as 148,221 acres. This is a smaller acreage than was returned in 1872, but the decrease has chiefly occurred in consequence of incorrect returns under this head in previous years, in those parts of England where fruit trees are not extensively planted, and in Wales. The land returned as under fruit trees does not constitute a separate portion of the cultivated area of the country, as the greater part of land so employed is also returned as under green crops or grass.

The extent of market gardens in Great Britain in 1873 was 37,884 acres. Of this number 34,743 acres were in England—the counties of Middlesex, Essex, Kent, and Surrey, containing 15,542 acres, or 44.7 per cent. of the market-garden land in England.

Less land was planted with Potatoes in the United Kingdom in 1873 than in 1872 by 138,000 acres, or about 9 per cent. The decrease in Great Britain was 49,000 acres, and in Ireland 88,000 acres. The general failure of the crop in 1872 tended to diminish the cultivation of the Potato in 1873.

	1869.	1870.	1871.	1872.	1873.
England .....	356,829	358,800	391,531	339,056	309,419
Wales .....	49,107	48,620	51,853	48,417	44,936
Scotland .....	179,275	180,169	184,307	176,615	160,327
Potatoes { Great Britain..	585,211	587,661	627,691	564,068	514,682

### A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 19.

#### ONCIDIUM.

A FEW members of this extensive genus claim our attention in this portion of our task, although our prescribed numbers render it necessary that they should be few. In the present enumeration those kinds have been selected which are remark-

able for the beauty of their flowers, and which, in addition, are sufficiently low in price to bring them within the reach of all amateurs; and even with these restrictions I find there are numbers of beautiful kinds which have been passed over in silence; but the six species introduced previously, and those here enumerated, will be found a reasonable proportion for the Century, reference to which will be found at page 11, July, 1873. To speak in general terms, *Cattleya* treatment will suit the kinds named below admirably, and therefore it will be quite unnecessary to recapitulate.

**O. PAPILIO MAJUS** (the Butterfly Oncid).—It is a maxim with me that this should be one of the first Orchids for an amateur to purchase; certainly no collection, great or small, should lack it, and yet I was more disappointed when I first saw the bloom than with any other species I have seen; the fact was I had been taught to expect too much. Having early indulged in a passion for entomology by forming collections of the British Lepidoptera, I had become conversant with all the forms of our native diurnal species, and the flowers of the plant in question had been described to me by non-entomological friends as being a perfect representation of a large butterfly, so I longed for the time to come when I should feast my eyes upon this vegetable wonder. At length report came that in a garden some eight miles distant *Oncidium Papilio* was in bloom, and as soon as I and another young companion could get away we started off to see this wonder. In passing through the stoves and Orchid houses my brain was full of great gorgeous butterflies, and I was wondering how the lower side of the wings would differ from the upper side, when, to my utter discomfiture, I was told the flower before me was the veritable one we had trudged eight miles to see, and I had actually stood before it and not recognised the resemblance. Those of my readers, however, who may yet be strangers to this beautiful Orchid must not, however, imagine from the above that no similarity exists, for there is a striking likeness if a little imagination is brought to bear upon it; but from having imagined too much I was utterly disappointed, and I have always a vivid recollection of my feelings upon that occasion whenever I draw attention to this plant.

*Oncidium Papilio* thrives best upon a block of wood or cork, and should be well exposed to sunlight. The pseudobulbs are somewhat compressed, and bear a large, solitary, dark green leaf, which is brightly streaked and spotted with reddish brown. The flower spike is long and slender, and from its apex only the flowers are produced one at a time. The spikes should never be cut off until quite dead, for I have known them to continue to produce flowers from the same spike for two or three years. The sepals are long and narrow, standing erect like the antennæ of a butterfly; the petals are broad, and extend horizontally, whilst the large lip is supposed to represent the body; the ground colour is bright brown, transversely barred with rich yellow, saving the lip, which is yellow in the centre, with a broad marginal band of bright bay. Native of Trinidad, &c.

**O. AMPLIATUM MAJUS**.—A grand old inhabitant of our plant houses, and one that never fails to charm every beholder. It is a massive-growing kind, and to bring it to perfection should be cultivated in a pot. The pseudobulbs are large, light green, streaked and freckled with red and brown, bearing upon their apex a large, thick, bright green leaf. The spike attains a height of about 3 feet, and is much branched, bearing a profusion of large, bright clear yellow flowers, which on the reverse side are white. It blooms during May and June, and continues a very long time in full beauty. Native of Guatemala, Venezuela, &c.

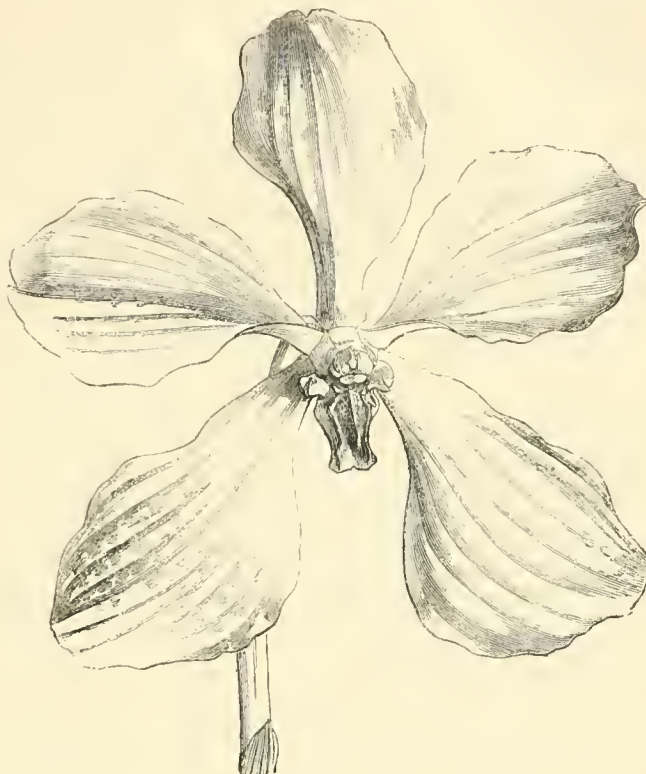
#### VANDA.

There are but few species of this fine genus which I can conscientiously include in my Century, because the majority of them luxuriate in strong heat, although at the same time I am fully persuaded several others might be grown under similar conditions. I have previously recorded my dislike to fumigation for the destruction of insects amongst Orchids, and my experience goes to prove that it is one of the chief causes of Vandas losing their bottom leaves. Some of my readers may say, "But how are we to get rid of the horrid pest which lurks in the axils of the leaves, and turns them a dirty reddish brown? We may just as well lose our *Vanda* and *Aerides* leaves by fumigation as by the insect." For this, which is popularly known as the red thrips, we use tobacco powder; and if the amateur is a smoker, he may fumigate any particular plant when enjoying his evening pipe.

**V. TERES**.—A very distinct species, the stems and leaves being terete, rush-like, and dark green. The flowers measure from 3 to 4 inches in diameter, and some what resemble those of a *Phalenopsis* in shape; sepals and petals white, suffused with rosy purple; whilst the lip is purplish crimson, but yellow in the throat. Some varieties flower much more freely than others. It may be grown either on a block or in a pot; the latter will be found preferable if the plant is of any considerable size. It usually blooms about June, and continues long in beauty if kept from the sprinklings of the syringe. Native of Sylhet.

**V. ROXBURGHII**.—A species of great beauty, much neglected of late years, but really well deserving a place in even the most choice selection. It is a small-growing species, its two-ranked leaves being thick and fleshy, carinate, and deep green; sepals and petals china white, and prettily tessellated, the lip in one variety being blue, and in the other red. It blooms during June and July, and lasts long in perfection if the blooms are not syringed. I am particular in naming the syringe, because I have frequently noticed flowers may get wet without injury from condensation, but if wetted with the syringe they invariably become spotted and soon fade away. This species is a native of northern India.

**V. CERULEA**.—This is a favourite with everyone, and may be called a gem amongst gems, and, as I have before noticed, it grows naturally at a considerable altitude, and in a somewhat low temperature. I am of opinion that it likes plenty of



*Vanda cerulea.*

light, a moderately cool temperature during winter, and a moist atmosphere all the year round. It should never be rested—that is, dried off, and requires the least possible amount of sphagnum or any other material about its roots. The leaves are arranged in a distichous manner, and are dark green. Spikes erect, bearing from six to twelve large flowers from 4 to 5 inches in diameter, and of a uniform lovely soft blue. It blooms at various seasons of the year, mostly during winter and spring. Native of Khasia.—EXPERTO CREDE.

### VARIETIES OF POTATOES.

I AGREE with the *Irish Farmer's Gazette* and the Rev. W. F. Radclyffe as to synonyms and pseudonyms, but must disagree with the *Irish Farmer's Gazette* in the list of synonyms given in the article "Old Friends with New Names" (see *JOURNAL OF HORTICULTURE*, page 55), and am glad Mr. Radclyffe has pointed out some of the errors. Without any divination, it may be considered that the basis on which the conclusions of the *Irish Farmer's Gazette* are founded were that of the trials in the "Chiswick Garden last year," and that the writer has no practical acquaintance with many, if, indeed, any, of the varieties of Potatoes in the list of synonyms. I have no desire to be hard on the Royal Horticultural Society, but cannot refrain from observing that whoever relies on so sandy a foundation for a list of synonyms must be prepared for the consequences; for the one object of a Society like this should be to prevent errors of nomenclature, and to keep down the varieties, as far as is consistent with the importance of the subject, to a reasonable number, giving no new, or alleged new, thing a certificate without proof that it is superior in quality and produce to existing varieties. The South Kensington establishment, as far as I can understand, is where the certificated varieties are manufactured *ad libitum* and *ad infinitum*, and it may be that any doubtful subject can be settled by the other establishment at Chiswick. No great harm will then be done; for though certificated at Kensington, it will be proved worthy at Chiswick or be found a synonym of some standard variety. It may be that a certificate incentive is necessary to induce the exhibition of new varieties, but that is no reason why a variety should one year appear as a certificated new thing and the next as a synonym. A certificate given anything means that it will be sent out at a price double or more than the double of that for which it would be if it were to be found a synonym, and I must submit that many of the errors in nomenclature, the multiplication of varieties, and the many worthless varieties existent are, in a great measure, due to the certificate principle adopted by the Royal Horticultural Society—the granting of certificates to subjects which only appear as selected specimens of what a sort may be brought to by culture and art, rather than as manifesting what the subject is under the general treatment of other kinds. Many subjects we happily do not hear of nor see named again after the year of their being certificated and distributed, and it would be well if no subject were allowed a certificate until it had been grown along with other standard ones, and found distinct and superior. No other test ought to be admitted with vegetables—they should be judged comparatively with other kinds, and they would then have given them what the public is certain to give them when the certificated or otherwise commended subjects come into their hands, after a comparative trial—commendation or condemnation.

I simply mention these matters, as they have long found a place in my mind among the impressions of the Royal Horticultural Society since the establishment at South Kensington. Horticulture has advanced, and will continue to do so independent of any centralisation of it in a society, but of that advancement very little of the solid part can be claimed by the Society outside Chiswick.

The best school of horticulture would be a large estate, established on the co-operative principle, cultivating fruits and vegetables for profit as well as the testing of new varieties, and then none but the very best kinds of either fruits or vegetables would find their way into private gardens. To Kew might safely be entrusted plants or floriculture and arboriculture, and with this and a national establishment, or even a private one, in so far as the money could be found from the private rather than public purse, dealing with fruits and vegetables, the Royal Horticultural Society might be let go, especially as it is a never-ceasing bone of contention over which no two agree. Disorder and disorganisation are but the forerunners of decay and dissolution, and to this the Royal Horticultural Society is advancing with blind measured steps. No

disinterested on-looker can fail to see the infatuation that prompts the two factions into which the members of the Royal Horticultural Society are divided—the desire for power; both studiously seeking the interests of the Society, and pursuing their cause with a vehemence that may hasten the inevitable day of reckoning. They pretend to uphold the Society which, as at present and for some time constituted, in no way promotes the interests of gardening or gardeners. Surely the fates have been against the Society since its removal from Chiswick to Kensington—the glory of the former being centred in the latter. Were Flora and Pomona to appear it is certain it would not be at South Kensington, except it were briefly upon some fête day, but at Chiswick amongst their devotees, old faces and true. Jealous indeed are the gods, and so is everyone in the horticultural world of the interests of horticulture.

The title of the article, "Old Friends with New Names," has led me to the above expression of my ideas of the Royal Horticultural Society. I will now proceed to express myself as regards Potatoes new and old, especially those mentioned by the *Irish Farmer's Gazette*. The onslaught is against "sixteen impostors with assumed names;" they being impositions on the Kentish Ashleaf. I could have understood this had they one and all been put down as Ashleaf, without the prefix Kentish. What is Kentish Ashleaf? Is there any difference between it and "Creper," a name given to the old Ashleaf on account of the tubers being produced at some distance from the stem on rather stout wires? In what respect does it differ from the old Ashleaf? I put these questions, for it is evident the *Irish Farmer's Gazette*, or its authority, has concluded that because some kinds are of one type, having originated from a certain variety, they are to be considered as synonyms of the original. In no other way can I account for the placing of Veitch's Improved Ashleaf in the company of Cambridgeshire Kidney. Last year "our best authorities" had found it identical with Gloucestershire Kidney and Royal Ashleaf, it not being, in my opinion, an improvement to place this very desirable kind—*i.e.*, Veitch's Improved Ashleaf—in the society of Early May, which is an inferior form of Ashleaf. Veitch's Ashleaf is a most desirable kind for forcing, in pots, pits, and frames, and it is, to say the least, straining a point to discover it is one year identical with Gloucestershire Kidney and Rivers' Royal Ashleaf—both of which are later by ten days to a fortnight, and have stronger haulm—and the next that it is Cambridgeshire Kidney, the Kentish Ashleaf.

Mena's Pride, happily, is so dissimilar to the "old familiar Ashleaf" that we may pass it by without comment, as no one who has grown the two—a thing, by the way, I may mention very few have—will ever agree to the synonym.

Up to this stage we have twenty pretenders for the honour of the Ashleaf, and it may be said of them all, one is as much Ashleaf as the other. They all show their parentage, and for ordinary purposes may be reduced to two, or at most three, kinds—*viz.*, Sandringham Kidney, the nearest to the original of all kinds named, notwithstanding that the *Irish Farmer's Gazette* sets it down as an imposition on Myatt's Prolific Ashleaf, the original name of Myatt's Ashleaf, which is ten days later—it is a very true stock of the old Ashleaf; Myatt's Prolific Ashleaf, or Veitch's Improved Ashleaf, the two being good croppers, and very good in quality, will succeed the Sandringham. These three are the best of the Ashleaf type, Myatt's having its tubers close to the stem, whilst Veitch's are produced on rather long wires, but gives a more even-sized tuber.

We now come to Lapstone, no more variable Potato known, so that we need not wonder at the number of synonyms. I could in any year put forth half a dozen from a selection of the true kind. It sports more than any other sort, and the kinds named as originating from it are all of them inferior, if we except Yorkshire Hero, which undoubtedly is a fine Lapstone, in no way inferior to it. Originating from the Lapstone by seed, it is not nearly so variable as the Lapstone, but, nevertheless, has all the characteristics of the Lapstone, it not being free from reverting to the Copper-nosed Kidney from which the Lapstone is derived. Huntingdon Kidney and all the *aliases* have more of the Copper-nosed Kidney blood than of the Lapstone, not one at all comparing with the Lapstone for quality. They are all too much nose, and heel too long; the Lapstone, though flat, being a bulky Potato, with very little difference between the rotundity of the nose and heel. The Yorkshire Hero has a better constitution, hence succeeds on soils from which the Lapstone is driven by their wetness and closeness. To keep the Lapstone true the

seed (sets) should be very carefully selected, choosing those that have the greatest rotundity, and have the ends as nearly alike as possible, rejecting those with thick noses and small tails, and this persisted in annually will keep the Lapstone very select. Than the old true Lapstone there is no better kind of Potato as a second early; but to say that all the varieties given at page 55 are synonyms of the Lapstone is decidedly wrong. Of the Lapstone race they are, and degenerate, but all are distinct from the Lapstone, which nine-tenths of those under that title are not. No variety, as before stated, varies so much, no kind is so difficult to obtain a break from seed. The seedlings all run back to the Copper-nosed Kidney, or have great length with flatness. Only once have I made sure of a break. I have at last a Lapstone with a rose skin, the tubers being long, flat, curved, thick nose, small tail end, double the size of the parent, with a thick sprout, purple and stout; haulm weak, erect, more like that of a round kind than a kidney, and though a late kind in sprouting, not needing to be planted on that account before April, or even May. It ripens with the second earlies, and when the disease is severe sheds its leaves, and escapes it. It will suit the Royal Agricultural Society: the *Irish Farmer's Gazette* will not treat it, because of the Lapstone race, as a synonym of that variety.

Regent is made the same as Early Oxford. It is time to give in, for they are as diverse as any two round Potatoes will can be, and I should not trouble about it except to say that those wanting a good Regent will find it in Walker's Early, which beats the whole of the Regents, being earlier, with a stiff erect haulm. It would be a happy union of blood whosoever might give the earliness of the Early Don and a touch of its pink eye to the Regent.

Red-skinned Flourball I must confess to being deceived in. I had what I thought was it, but discarded it from its being a "Soapball," when last year I had some Red-skinned Flourball sent me. They were very different from the other, having shallow eyes and a rough skin, the first having deep-sunk eyes and a smooth skin. I have at last the true sort as originally sent out by Messrs. Sutton & Sons, Reading; and though it boils well now, cooked in the oven or roasted it is better. The American Red is not Red-skinned Flourball nor Boston Red: both are the same as I had at first—what the *Irish Farmer's Gazette* may know, if it can reach back to the time of the disease becoming general in 1845, as the Irish Cups, and well the eyes resemble cups.

I have no seedlings to recommend, though I have one or two for the Royal Agricultural Society ready now, and may in 1878 have more that no art of man can prevail against by persistent bad cultivation with disease. I do, however, recommend the old Ashleaf Kidney, its improved form, Myatt's Prolific Ashleaf, Lapstone, and a round flat sort, Paterson's Victoria, with Walker's Early Regent, and Red-skinned Flourball, making sure that you have it, and New Hundredfold Fluke, the latter a piebald sort, and with the next preceding a late good keeper. I am also glad to verify the statement of "D., Deal," that they are not subject to nor have had disease.

Just a word about Willard, a red-skinned sort that boils beautifully white, and is excellent both in cropping and quality. Excelsior is a fine white sort, round as is Willard, and both have dwarf haulm—the very type of haulm we want, but lacking the woody character of Hundredfold Fluke and Red-skinned Flourball. I have some seed from Excelsior, from which I hope for much.

Mr. Luckhurst is disappointed at the result of the Potato essays, no prize being awarded. I agree with the finding of the Judges, but I do not agree with the "blundering" policy of the Royal Agricultural Society. If the essays were not worth the £100 prize, surely the Society ought to have been above saving themselves £100 to offer in a prize for that which the essays did not contain. The essays have had taken from them their substance; a basis for the Royal Agricultural Society to act upon has been given; and I am sure none of the essayists will begrudge the time and labour expended if only the result be the improved cultivation of the Potato, which, however, the Society ignore, choosing rather to seek for disease-resisting new kinds to battle against the present mode of cultivation, which it needs no one extraordinarily endowed to discern, is with the Royal Agricultural Society perfection. Go on, Mr. Luckhurst, cultivation is more at fault than the Potato; but make it good as you may, the fact remains that whether the treatment be good or not, there are conditions attending the culture of the Potato over which the cultivator has no direct or certain control—in other words, Potatoes are diseased under the best

cultivation, as I contend they have been for a very lengthened period, if not through all time.

We want hardier-constitutioned kinds of Potatoes—kinds that will endure the vicissitudes of our climate; kinds that by bad cultivation as for centuries practised will not become diseased; kinds that are disease-resisting, mere waxy lumps of matter as yet, but which we all of us wish to see floury, suited alike to the Royal Agricultural Society and the consumer. It is about as likely we shall have disease-proof Potatoes in 1878, and continue the present general cultivation, as we shall then enter on a period of uninterrupted prosperity and peace.—A.

## CHATSWORTH,

THE SEAT OF THE DUKE OF DEVONSHIRE.—No. 1.

CHATSWORTH is a hamlet of Edensor parish, about nine miles from Chesterfield in Derbyshire; it was known in Norman times as Chetesworde, and belonged to the Crown, though it was in the custody of William de Peverel, ancestor of that "Peverel of the Peak" Sir Walter Scott has celebrated. From the Peverels it passed to the Leche family, so named from their ancestor being the king's leech or surgeon. From thence it passed to an Agard, who sold it to Sir William Cavendish, and it has since remained in the possession of his descendants. He married the well-known heiress of Hardwick, and thus became the chief of the Derbyshire aristocracy. He began to erect a noble mansion, but dying before even one of its wings was finished, the completion devolved on his widow, who by her fourth marriage became Countess of Shrewsbury. That building did not satisfy the first Duke of Devonshire, so he began (in James II.'s reign) to reconstruct it. This was in 1687, and the mansion was finally completed as it now appears in 1706.

What memories, associations, and reflections crowd on one's mind at the mention of this place! No need to couple with it the clasp name of the "Palace of the Peak," a name which certainly gives one the notion that towering above its stately halls is to be seen the picturesque mountain bearing that appellation, instead of its being some fifteen miles away. No need to tell a gardener at least of the number of its rooms, the size of its halls, the costliness of its decorations, or the value of its paintings: to him it speaks of something above and beyond all these. It was the home of Paxton, the place where the Victoria regia first opened its beauties in England, where the house is now so celebrated as the model of that glass palace to which all the world was attracted in 1851, and which now crowns the heights of Sydenham—one of the chief sources of pleasure to an overgrown metropolis, and in addition to all this still the home of many a rare plant, and the place where all interested in our belov'd pursuit may find amusement and instruction.

It was with some such feelings that I turned aside on my way to the great Manchester Exhibition in September last to pay a long-promised visit to Chatsworth. It had for many a year been treasured up as a treat in store, and now that it has been enjoyed the memory of it will cling to me as one of those bright days in the calendar *creta notanda*. It was a lovely evening when I found myself at the Rowsley station, and there being no bus for more than an hour, I started off for a most lovely walk to Edensor. It was moonlight before I reached the village; and the splendid foliage, the calmness of the night, broken only at times by the deer as they bounded through the bracken, tended to make the walk most enjoyable. The hotel at Edensor is charmingly situated, and I am bound to say I was as comfortably lodged and taken care of as I could have been at any west-end hotel, but truth compels me also to say I had to pay quite as much for my accommodation as I had at the "Langham" a week before. The whole aspect of the village suggests to me the thought, that of all forms of society the feudal is (when the carrying-out of it is complete and the head of it considerate), that which ensures the best results; just as of all forms of government despotism, if the despot be truly the father of his people, is that which secures the greatest happiness. Here at Edensor you have the very ideal of a village: the houses all so beautifully built and the gardens so well kept, the church and school standing in the midst of the people, that but for that most disturbing element our poor human nature, one might suppose that this must be the abode of contentment and peace.

On the following morning, in accordance with a courteous invitation from Mr. Speed, the able gardener at Chatsworth,

I walked over to the house, not for the purpose of viewing the interior, but of seeing the grounds and gardens. And now how shall I venture to attempt any description of the varied beauties and immense collections of this wonderful place? But in looking round I came to the conclusion that there were two specialities of the place which in their way are unique, I mean the grand Palm House and the Victoria Tank House. "Unique!" some one may say fresh from reading the glowing description of the Palm house at Kew in the "Edinburgh." Yes, unique; for while both are Palm houses they are essentially different. It seems a necessity of a public garden that artistic arrangement must give way to utility. It is not arranged for the pleasure of few or many, but for the benefit of science and the world at large. Now science scoffs at art. What are all the glories of pencil or taste of arrangement com-

pared with the gathering of one scientific fact? And so Kew Palm house, while possessing many noble specimens, is to the general spectator muddly, dirty, and inartistic. Happily at Chatsworth it is the other way: science is not, as we know from its records, neglected, but taste predominates. Where in a public garden, for instance, could be arranged that cross avenue of Musas which makes one almost fancy oneself in some tropical forest? Look, too, at those grand hanging baskets, suspended all along from the roof, 5 feet in diameter, and filled with Achimenes crowded with their lovely flowers and hanging over on all sides of the basket. I never believed this plant to be capable of such things until I saw it here. Again we come on a forest of Agaves, suggesting at once Mexico. Then look at these noble specimens flanking the centre walk; *Chamærops*, *Phoenix*, *Livistona*, and other Palms



CHATSWORTH.

towering up to reach the lofty roof. Here, again, are fine plants of *Cycas revoluta*, and in another place a charming rockery from which a cascade falls, and around which tropical plants send forth their lovely foliage. But stay, what is this?—that brilliant scarlet flower displaying itself some 8' or 10 feet up—can this be the puzzle of many an Orchid-grower? Yes, it is *Renanthera coccinea*, at which many a good gardener has shaken his head and said he could do nothing with it. Mr. Speed, however, has found out the way to make it display its beauties. He placed a green pole in the Palm house, planted the *Renanthera* close to it, up this it climbed and flowered; then another higher pole was placed near it, and then a third, so that now it has run up about 10 feet, and displays its brilliant coloured flowers most profusely. It is a triumph of good culture, of which Mr. Speed may justly be proud.

Stove climbers have here an opportunity rarely afforded to them. We see *Allamandas* confined in pots, or else allowed a single rafter to climb upon; here they wander at their own sweet will, and most lovely objects they make, their rich golden blossoms showing themselves most conspicuously. Tree Ferns, too, have a grand opportunity of displaying their beauties, and the whole aspect of the house is one of ever-changing and varied beauty. Nor will the gardener who is botanically inclined or fond of curious forms be at fault. There is a fine collection of *Cecyl* ranged along the side of the house, and many rare

forms of *Agave*\* and *Beaucarnea* scattered throughout it; while lovely masses of *Adiantum* on the rockwork, and other Ferns, relieve by their tender and elegant foliage the more rigid forms just enumerated. Altogether this Palm house is a thing of beauty on which one delights to dwell, and which must be a great source of pride to the gardener in whose charge it is.—D., Deal.

#### MY BIRD DIARY 1873.

In May last, when I sent you my bird diary for the first part of 1873, I promised to send my report again at the end of the year, but I have so little of interest to chronicle, that, had it not been for my promise, I should hardly have ventured to trouble you with the following lines.

*July.*—I mentioned that in May several cuckoos were constantly in my farm garden, and that they kept down the grub which devours the leaves of the Gooseberries; as a rule they disappear at the end of June, indeed so regularly that there is a saying in these parts, that "the cuckoo always buys a horse at Pershore Fair (the 28th June), and rides away." One, however, a full-grown young bird, was left behind this year, and I saw him frequently till the 18th July, when he

\* From a photograph by Mr. Clarke, Photographer, Matlock Bath.

finally disappeared. He was very tame, and would allow me to come within a few yards of him.

Up to the middle of the month we had been unusually free from blackbirds; we had only our own home-bred birds about, and we did not much object to their helping themselves to fruit. There was plenty for us all; but one morning, about the middle of the month, when I went out, I saw the Raspberry bushes in a state of agitation. They were shaking about without any apparent cause, but on going nearer to see what was the matter, about twenty blackbirds fled out of them, and as many more from an adjoining plantation of Red Currants. The case was evident enough: my neighbours' blackbirds, having finished the fruit at home, had come and quartered themselves on me. Others came to join them, till the garden was full of them. We shot at them, we tried to drive them away with dogs, by shouting, by throwing stones, but to no purpose; at last they would not even rise, but sat there, hiding themselves in the foliage, twittering and laughing at us. They finished the Raspberries and Currants; then all the Gooseberries which were not covered; then the early Pears; then they set to work at the Plums, preferring the Victorias to all others, but when they were finished, taking any that were left, ripe or unripe—all was the same to them; then they finished the Mahonia berries. Then they disappeared for a time, returning about the middle of October, to eat the windfalls from some perry Pears. This done, they left us for the winter, and returned to their own homes. They were assisted by a pair of missel thrushes and a few song thrushes; but these last are by no means so bold or so voracious as their kinsmen.

In September and October, beyond the raids of blackbirds mentioned above, I have little to chronicle. We had a passing visit from blackcaps and tomitts, which took a few of the tender-shelled nuts—Cosford I think they are called. The birds always take these nuts. The tomitts, too, stocked a few of the Pears, but did far less damage than in some previous years. About the end of the month the Apple and Pear crop was gathered and stowed away, and, as I vainly hoped, was safe against the incursions of enemies; but in this I was mistaken. On going to look at my fruit one day, I found large slices taken out of the best specimens of Pears, and on examining the fruit there could be no mistake about the perpetrators. The rats had got to them. These voracious brutes seem to swarm in every part of the country to an extent which never was known before. I expect that the destruction of stoats and weasels by game-keepers has much to do with their increase; I believe, even from their own point of view, keepers would be gainers if they preserved the weasels, at any rate for some years to come, for the rats are great destroyers of eggs as well as of young rabbits, and are very difficult to catch, as I can testify. They have scaled the walls of the house by means of the ivy, got into the roof in some way we cannot discover, and have destroyed the best of the fruit which was stored there. We can hear them at night, knocking down the Apples with a bump from the shelves on which they were placed, and then rolling them along the floor to some part where they stow them away. We dare not poison them, for in this case they prove greater nuisances in their deaths than in their lives. We have tried traps of all varieties, but though we have caught a few, we cannot get rid of them altogether. I have discovered, however, that they can be driven from any particular run which they frequent by pouring gas tar into it, for rats, though living in and upon every kind of filth, are very particular about their personal cleanliness.

In December the only stray birds which I noticed were a family of bottle tits, which, as usual, made but a passing visit; and a few solitary cock bullfinches. Our birds are now reduced to about the original stock with which we began the year, with the exception of the starlings, which left us in the summer, and probably were killed in some of their plundering expeditions. We have a few blackbirds and thrushes, robins, hedge sparrows, chaffinches, wrens, house sparrows, and yellow-hammers.

I may venture, however, to say a word or two on the Wild Birds' Protection Act, which prohibits the killing of certain birds during the breeding season—from the 15th March to the 1st August, yearly. The list of protected birds seems to have been drawn up with great care and knowledge of their habits. The only names I could wish to see added to the list are the chaffinch and the linnet, but I suppose many gardeners would object, as they are undoubtedly troublesome in devouring the newly-sown seeds; but I think all the omissions of the

Bill are judicious. The starling, for instance, is one of the greatest thieves we have for certain kinds of fruit. It is particularly fond of Cherries, and your readers may imagine what chance a grower of Cherries would have of a crop, when I mention that in one large orchard in this county I am informed that more than one thousand starlings were killed. They came in large flocks—two or three hundred at a time, and settled on the trees, and would soon have stripped them of all their fruit if they had been unmolested. Blackbirds and missel thrushes are also rightly omitted, for they are omnivorous as far as fruit is concerned, and are so bold, and have such enormous appetites, that it is necessary to wage war against them; but I must confess to a weakness for the singing thrush, and could wish to see his name inserted in the protected list. The bullfinch again is most properly omitted, as he is most destructive to the tender buds, and, as I mentioned in my last notice, he lives on them, and not on any grubs they may be supposed by charitable people to contain. The house sparrow, too, though at times he is very useful, is at other times so destructive that he is fairly exempted from protection. The same may be said of the magpie and jay, and even of the rook, which, though most valuable in the spring, requires to be kept at a distance in the fruit season, as he, too, has a particular weakness for Cherries and for Walnuts. On the whole, I think the Bill has been most carefully drawn. The insect-eating birds, as a rule, are protected, while the fruit and grain devourers are very properly left to take care of themselves.—WILLIAM LEA, *St. Peter's, Droitwich.*

## NOTES ON VILLA AND SUBURBAN GARDENING.

WHEN the weather is not very inviting for out-door operations, advantage should be taken of it to regulate the greenhouse and frame plants previously to commencing their spring growth. That the health of plants as well as of animals is materially influenced by cleanliness is evident from the difference between the growth of the same species in the country and in the smoky atmosphere of large towns. In the country plants grow with vigour, whereas in the town, although enjoying the same advantages as to soil and water, they only drag out a miserable existence. This is caused by the respiratory organs becoming choked by the accumulation of dust on the foliage; and as the plant is thus unable to breathe, some derangement of the system must be the result. In the constituent parts of the atmosphere the most delicate analysis has failed to detect any material difference between that of densely populated towns and open places, but that it is less transparent is obvious to those who have ever observed it from a distant eminence. There is no doubt, therefore, that the want of light and the dirty state of the foliage are the principal reasons why plants do not thrive in towns; but the success that has attended their cultivation in Ward's cases proves that they can be grown in such situations, provided they are kept clean, have all the light that can be procured, and are not parched-up by a dry atmosphere, for it is to keeping plants free from dirt and to supplying them with an atmosphere containing moisture proportionate with the temperature of their habitations, that we may attribute their successful cultivation in glazed cases. From the above observations the window gardener will see the necessity of keeping his plants clean, especially in dull weather, and the possessors of frames and greenhouses the propriety of washing the glass frequently. In regulating the plants it will be well to wash the foliage of Oranges, Camellias, and other smooth-leaved plants with a sponge and clean water, and the dust may be removed from Pelargoniums and other woolly-leaved plants by brushing them lightly with a soft brush. After the plants are cleaned the pots should be washed, and the surface in each replaced with fresh soil, and if they require it they should be neatly tied to fresh stakes. It is not an uncommon occurrence to see a stick as thick as a man's thumb supporting the delicate stem of a Calceolaria, or forming part of a trellis for a fragile and elegant climber. This is bad taste; and it should be recollected that as a support of this kind is only a necessary evil, the more slender the sticks are the better.

Carnations, Picotees, Auriculas, and Polyanthus in frames should have all the air possible in mild weather, but they must be protected from wet. It is a good plan to have the frames raised upon a brick placed beneath each corner, with moveable boards to fit round it, so that they may be let down in mild weather to admit a current of air among the plants, and be replaced in case of frost. Remove all decaying matter, so as to keep the atmosphere within as pure as possible, and prevent the attack of mildew on the plants.

Where the first sowing of Peas is coming through the grounds it will be advisable to draw a little earth to the plants. In case of mice attacking them, I know of no better plan than trapping them; that called the figure-of-4 trap, a number of which can

soon be made, may be employed. Dig vacant ground, as all soils, but especially such as are of a clayey nature, profit much by being fully exposed to the action of frost, which has the effect of rendering them friable and easy to work. Let the pruning of all kinds of fruit trees be finished as soon as possible, and forward every operation that can be done with advantage now, as the most busy period of cropping is fast approaching.

As a suburban garden will only contain a comparatively limited number of plants, it is a matter of policy to have the majority of these evergreens, that in the winter season, when all else is so dreary, it may wear a moderately green and cheerful appearance. Of these such as bloom gaily and abundantly, and particularly such as blossom in the winter, or bear showy fruit at that time, or have variegated foliage, should be selected as tending less to create sombreness and gloom; and combining the elegance of their flowers or their appearance with the permanence of their leaves, for that purpose we would recommend the various sorts of Holly, the double-blossomed *Frax*, several kinds of Broom, *Garrya elliptica*, *Rhododendrons*, *Andromeda floribunda*, *Berberis Aquifolium*, *Cotoneaster microphylla*, numerous Heaths, *Kalmias*, Rock and Sun Roses, Gum Cistus, &c.

Although evergreens may fitly thus prevail in a small place, it will be unwise to cultivate them to the exclusion of deciduous shrubs. The latter, by their lighter foliage and sprightlier manner of growth and showier flowers, seem to be the natural bodying-forth of summer's richness and gaiety, and this glorious season would scarcely appear rightly attended and adorned without them. They are, indeed, as thoroughly the life of summer, as evergreens are of winter, and, perhaps, of the two the absence of winter's decorations would be even least regretted by the mass. Cuttings of shrubs may be put in during February. Let strong shoots of last summer's growth be selected. Choose them from 9 to 15 inches long, and, if you can, take about 2 inches of the old wood with the shoots at their base. Trim-off the lower leaves, place the cuttings halfway in the ground, and plant them in a shady border to root. Do this in February in preference to October, as everything roots earlier from spring operations. You may also plant cuttings in June, but keep them moist and shady. In pruning shrubs be careful to cut-out the long rambling shoots of the last summer's growth, which disfigure their appearance; cut away also branches of shrubs which interlace each other, that every shrub may stand alone and well defined. Take away their suckers, and let each shrub be kept to a single stem.

*Laurustinus*, *Phillyreas*, and *Laurel* are excellent shrubs to plant near buildings or to hide a wall; they are evergreen summer and winter, very hardy, and quick-growing. The *Pyracantha* is an elegant shrub with its clusters of red berries, and it looks gay during the autumn and winter. The *Arbutus* or Strawberry Tree is loaded with its Strawberry-like fruit in August, September, and October. This is a beautiful shrub placed singly on a lawn, if kept to one single clean stem and a fine branching head. Portugal Laurels are beautiful, their deep green leaves and scented feathery flowers make them an important shrub in all gardens.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

In every garden where the importance of having in a forward state all out-door operations, such as pruning, digging, trenching, and making alterations, is a primary consideration, there will now be little of that work left undone. In our own case all such work has been pushed forward, but, on the other hand, much that used to be done in frosty or wet weather, such as Strawberry supports, pegs, *Pea sticks*, &c., has yet to be attended to. Where *Pea sticks* can be obtained in abundance it is as well to have them new every year, as the small sprays to which the tendrils of the *Pea* cling are broken off during the winter; but the old sticks can be used a second time if new sticks are mixed with them in about equal proportions. Where *Pea sticks* have to be cut, it ought to be done at once, and they should be pointed. This is best done when they are freshly cut; a man can do more work, and that with more ease to himself, than when the wood is dry and hardened. It is also desirable to size them. The dwarf-growing sorts, such as *Tom Thumb* and *Blue Peter*, though they will do without sticks if these cannot be readily obtained, will be all the better of sticks 18 inches long. The largest proportion of them will be 4 feet long. A sufficient quantity must likewise be prepared at 6 feet, for *No Plus Ultra* and allied sorts. It facilitates operations at the time of using them if they are tied-up now in suitable bundles. We prepare elm or hornbeam sprays about a foot long for Strawberry supports; about three or four sprays are placed round each plant.

Seeds that have been sown are vegetating freely. *Peas* are up nicely, but the birds and mice are at them, the latter before they are through the ground, and the former as soon as the tender growth can be discerned. Mice are caught with a figure-

of-4 trap, an arrangement which has been described in this Journal, and in which a brick falls and crushes the animal at once. For the birds nothing answers better than the *Pea* protectors advertised weekly; these are placed over the rows as soon as the *Peas* come through the ground.

Planted-out the *Potatoes* on an early border; the sorts are *Myatt's Prolific Ashleaf*, and *Veitch's Improved Ashleaf*. The ground is in excellent order. The sets had been spread-out on the floor of a loft and have sprouted a little, but being carefully removed without detaching the sprouts, there will be no check to the growth. Many persons plant with a dibber; one man makes the holes and another follows and drops a *Potato* into each: this is about the worst method possible, especially if the ground should be wet. A better way is to draw drills with a hoe and plant the sets in them; then, should the ground not be in good order, a little dry light mould can be placed over the sets. Ours are planted with a spade or digging-fork. The ground had been prepared by digging and manuring early in the autumn, and as it is now lightly dug or forked over, the *Potatoes* are planted so that the ground is left loose.

### FORCING HOUSES.

*Vineries*.—Some of the best *Grape-growers* complain that their *Vines* are not starting strongly this year. Last season was not favourable to properly ripening the wood, and this is, no doubt, the cause of any weak or uncertain growth in the present year. In our own earliest house the *Vines* are starting very regularly, and the growths are rapidly gaining strength. In a house devoted principally to *Muscat* of *Alexandria* they have not broken well; several of the eyes have not started yet, though some of the growths have made considerable progress. In the same house *Black Hamburg* and *Madresfield Court Black Muscat* have started into regular growth. We have now suitable weather for forcing; the nights are not cold, so that it is not necessary to overheat the hot-water pipes, and sometimes we can shut-up early and utilise the sun's rays.

Those having charge of forcing houses at this season should pay much attention to the ventilation. When cold winds are blowing from the north or east, with bright sunshine for half an hour, and the sun is hidden behind a bank of clouds for a similar period, with glimpses of sun and clouds intervening all through the day—when such is the case it is better to let the temperatures run up from 5° to 10° than to open the ventilators too much and chill the tender growths. Shut-up very early in the afternoon, any time after two o'clock, or at least before three, according as the house faces the sun. At any rate, no harm will result to the *Vines* if the thermometer rises to 85°. Our time has been taken up tying and training the young growths as described two weeks ago. We keep up a good supply of moisture from evaporating troughs and by sprinkling the paths and borders, but the *Vines* are not syringed after the buds are fairly started. While we approve of a good supply of moisture, there is a probability of overdoing it, especially if the water-troughs are cast on the pipes. This has been abundantly proved in an early house here, where it is found that by using all the water-troughs early in the season, at a time when the first leaves are forming, the foliage produced is thin in texture, and will not stand an hour's sun in March; and when only half the number of troughs is used the growths are stronger, and the leaves robust and healthy.

Made a sowing of *Dwarf Kidney Beans* thickly in a box, to be planted out in pots when they are sufficiently advanced.

*Strawberries* in pots are doing very well this year. The earliest batch has scarcely any plants in it that have not thrown up abundance of flower trusses; the fruit has set well and is swelling-off nicely, though scarcely any attention was given to setting the flowers. The main elements of success are a comparatively dry atmosphere and a night temperature of 60°, with a little rise in the daytime, the ventilators front and back being kept open a little even in dull cold weather. The same treatment suits *Pines* in the house where the fruit is ripening. Weak liquid manure water helps to swell the fruit, and should be applied at each alternate watering. No manure water is applied after the fruit changes colour.

*Peach House*.—Should the occupants of this structure now be in flower, it is very desirable to brush over the anthers with a camel-hair pencil; this will facilitate the setting of the fruit, but it will not obviate the effects of inefficient ventilation or an over-moist atmosphere. The house should be aired very early in the morning: open the top first, and as the day advances a little air should also be admitted by the front ventilators. If there is bright sunshine it will give an opportunity to admit air more freely. See that the border in which the roots are is not overdry; although the management may be right in every other respect, if the roots are in a dry medium the flowers will drop off.

### ORCHARD HOUSE.

The only occupants of this structure now are *Peach* and *Nectarinas* trees, with *Strawberry* plants on the shelves near the glass. The trees are all in pots and are looked over once a week; those that are dry get a thorough watering. The *Strawberry*

pots seldom require water more than once a-week at this season, but the soil should not be allowed to become too dry. The house ought to be thoroughly fumigated before the flower buds open to destroy aphids. Ventilate freely in the day time, shutting up close at night.

#### STOVE AND GREENHOUSE.

Orchids throwing-up flower spikes must be carefully watched; they should be examined every night with a lantern if slugs are in the house. *Oncidium ampliatum*, the flower spikes of which are now throwing up, is exceedingly attractive to them. There is no better way of getting rid of them than by looking over the plants, say at 8 and 10 P.M. We have not yet been able to entirely eradicate bug from the house, this pest is now showing signs of active life. Our plants that are known to be infested with it are looked over (with a sponge dipped in water wherein soft soap has been dissolved), once a-week if possible. There is a possibility of getting rid of mealy bug entirely if it is followed-up persistently. Green fly seems to be more than usually abundant this year. The only certain destructive agent in greenhouses or forcing pits is tobacco smoke, but the houses must be fumigated immediately it appears, for if it is allowed to increase the plants are much weakened. Roses, stage and fancy *Polargoniums*, suffer the most from its attacks. The worm which attacks the Rose bud in an early stage of its development must be searched for on Roses being forced. It can readily be detected by observing the leaves on the shoot near the top, they are ingeniously fastened together as a means of protection.

The greenhouse department is now gay with spring-flowering bulbs and plants. As regards nearly all forced subjects, they ought to be removed from the forcing house before the flowers are expanded, as if these are allowed to open in heat, as a rule they will not continue long on the plant when removed to a cool house. See that all specimen hardwooded plants are trained into shape as soon as possible.

#### FLOWER GARDEN.

We ran the lawn-mower over the lawn, and this has greatly improved its appearance. Digging shrubbery and herbaceous borders, sweeping walks, and keeping all as tidy as possible. Continue to propagate all bedding plants of which there is not a sufficient stock.—J. DOUGLAS.

### TRADE CATALOGUES RECEIVED.

S. Dixon & Co., 48A, Moorgate Street, London, E.C.—*Select List of Vegetable Seeds, Flower Seeds, Potatoes, &c.*

Drummond Brothers, 52, George Street, Edinburgh.—*Catalogue of Vegetable and Flower Seeds.—Select List of Hybrid Gladioli, &c.*

Teutschel & Co., Colchester.—*Retail List of Japanese Lilies, Orchids, &c.*

John Harrison, Grange Road, Darlington.—*Descriptive Catalogue of Vegetable and Flower Seeds, Bedding Plants, &c.*

### TO CORRESPONDENTS.

"\* We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (*A Constant Subscriber*).—London's edition of "Repton's Landscape Gardening," Appleby's "Orchid Manual." The latter can be had from our office free by post if you enclose 2s. 7½d. postage stamps with your address.

BURNING OIL IN GREENHOUSES (*H. T. H.*).—Any combustible burnt in a greenhouse is injurious to the plants unless there is a flue or chimney of some kind to convey the fumes from the burning combustible into the open air.

VINE BORDER (*J. B.*).—You will have seen directions for forming one in our last number, page 106.

CROQUET GROUND (*J. A.*).—We published full directions for making a bowling green in our No. 468, and the same directions apply to a croquet lawn. It should not be less than a quarter of an acre, and oblong is the best form. 60 yards by 90 yards is a good proportion.

FUCHSIA MALFORMED (*J. E.*).—It is a curious sport, three small corollas in one calyx; but it would not be permanent, probably, if the branch producing it were rooted; nor, if permanent, do we think it would be so graceful as the flower in its normal form.

STOVE PLANTS (*Julia M.*).—We hope in a short time to have a series of

communications on the subject. We have at present no manual on their cultivation.

ORCHIDS (*F. M. J.*).—"The Orchid Manual" includes the culture of greenhouse and hardy Orchids. You can have it free by post if you enclose thirty-two postage stamps.

PLANTING FLOWER BEDS (*S. N. M.*).—We cannot undertake planting, we can only criticize that which is proposed. If you send another plan with your own arrangement we will suggest any alterations we think desirable.

LITCHI OR LITCHEE (*G.*).—The usual botanical name applied to the tree bearing this fruit is now *Euphoria Litchi*, but it has been included in other genera, as *Dimocarpus*, *Nephelium*, *Sapium*, and *Scytalia*. It was introduced here by Mr. Warren Hastings in 1785. The dry fruit not with in our markets gives but a faint idea of what it is when eaten fresh in its native country.

FORMING BUSHY CINERARIAS (*F. H.*).—Your query was answered last week, page 106. We would add that the plants should not be crowded, but be kept near the glass and not touching each other, turning them round if they are likely to be one-sided.

PLANTS UNDER RED CEDAR (*X. Y.*).—As you cannot get grass to grow you may raise some plants of *Pyrethrum Tschischewi*, sowing the seed in pans, and placing them in a greenhouse near the glass; when large enough to handle prick out an inch from each other, and finally plant out about 3 inches apart, having loosened the soil about the tree, and watering until established.

POND CLEANING (*Idem*).—Some lime mixed with the mud and decaying matter taken from the pond would prevent any injury to the members of your family from the effluvia given off; and whilst the pond was being cleaned you might use a disinfectant, as chloride of lime.

WOODLICE (*W. H. H.*).—Having tried the potato plan—a boiled one wrapped in a little hay and laid on its side—without avail, we can only recommend you to place some damp hay against the foot of the walls of the structure where they are troublesome, and in the morning pour boiling water on the hay and down the walls; the woodlice will be secreted under the hay close to the wall. In this way we have killed them by thousands; and the boiling water, if the soil is firm, does not penetrate deeply and cannot injure the roots much, as it need not be poured on in the quantity to do harm. Moss is quite as good as the hay, or better. We have also poisoned them by mixing lard with finely ground oatmeal, so as to form a crumbling paste, added about a table-spoonful of arsenic to a half-pint, and placed it on pieces of slate in their haunts; but great care is necessary in using the poison, and it is not always that the woodlice will take it.

SEEDS FOR NEW ZEALAND (*C. W. D.*).—The principal London or provincial seedsmen know what seeds are most suitable for the district you name. It would be best for you to trust to them to send out a collection.

CAMELLIA FLOWERS NOT EXPANDING (*E. B. Shaw*).—The buds do not expand from the plants having more blooms than the roots can supply with nourishment, they not being in a very active state. We should report the plant as soon as the flowering is over, but not give a large shift, nor place it in a tub as you propose. Drain well, and keep the neck or collar high in the centre of the pot or tub, and remove what old soil can be taken from amongst the roots by a pointed piece of wood. Use the top inch of a light loamy pasture, chop or tear it up fine, and press firm. If the pot admit of an inch or so of fresh soil all round the ball it is large enough.

PAMPAS GRASS CULTURE (*W. Russell*).—Cut off the dead parts in April or when the young growths are being made, but we prefer to leave them until the young growths are somewhat advanced. Mulch round the plant when it begins to grow with some rich compost or well-rotted manure, and water with liquid manure in dry weather.

MESEMBRYANTHEMUM CORDIFOLIUM, ECHEVERIA GLAUCA, AND POINSETTIA SOWING (*F. J. T.*).—The *Mesembryanthemum* and *Echeveria* seed sown now in a gentle hotbed and grown-on will, by bedding-out time, form nice little plants available for planting-out in June after being well hardened-off. They require to be kept near the glass and to be very carefully watered. *Poinsettia pulcherrima* comes into flower in winter, and is grown for its scarlet bracts. It should be sown in a hotbed, grown in heat through the summer, and kept near the glass, so as to be dwarf. It should have a warm greenhouse or cool stove. Cuttings put in during August make the best plants.

PERENNIAL PHLOX SEED SOWING (*H. H.*).—Sow the seed in March in a pot or pan well drained, and filled to within a quarter of an inch of the rim with a compost of light fibrous loam two parts and leaf soil one part, with a free admixture of silver sand. Make the surface fine and even, scatter the seeds evenly, and then cover with fine soil lightly. Place in a gentle heat, keeping near the glass, and when the seedlings show the second leaves prick-off, in pans or boxes about an inch apart, and return to the hotbed, shading from bright sun for a few days. Harden well off, and plant out-doors in rich light soil about a foot apart, where they are to remain to flower.

AMERICAN BLIGHT (*C. Y.*).—Dress the Apples with the paraffin undiluted applying it to every part of the stem and branches, and particularly to the swelling, but keep it from the buds. You should likewise lay bare the roots, and the thick parts of these may also be dressed with paraffin, using a brush. Do not pour the paraffin about, but confine it to the stem, branches, and thick roots if you find these infested by the blight. If the roots are attacked, the soil removed should be replaced by fresh. It may be necessary to go over the trees in summer, applying the paraffin by means of a brush to the parts affected, but taking care to keep the oil from the leaves and young wood.

DESTROYING DAISIES ON LAWN (*C. A. D.*).—If your lawn is of moderate extent we should advise you to employ Watson's lawn sand, which undoubtedly destroys Daisies and other weeds; but the lawn is made to appear brown for a time. It may be had of most of the principal nurserymen and seedsmen, directions for its use being furnished with the article. The old plan of grubbing them up with a knife is a tedious but nevertheless good mode of getting rid of them, and if you do not employ the lawn sand we advise this. It is remarkable how soon they appear again after they have been removed, and we incline to the opinion that on some soils it is waste of time seeking to extirpate them. It is better to cut off their heads with a Daisy-knife every second or third day, for it is only when they flower that they mar the appearance of a lawn.

ERRATA.—Page 102, third line from top, first column, for "stooping" read *sloping*. Page 103, twelfth line from top, first column, for "dies" read *dries*. Page 104, sixth line from top, first column, for "when not wanted" read *where not wanted*.

INSECTS ON CLUB-ROOTED CABBAGES (*C. L.*).—They are a species of the *Acarus*, or Mite, and feed upon the decayed parts of vegetables. Whether

they occasion decay by wounding the vegetables is doubtful. If you remove all your Cabbageworts, buru them, mix some gas lime with the soil, and avoid growing Cabbageworts on the same plot for twelve months, you will extirpate the Acari.

**INSECTS (W. T. F. M. J.).**—The little flies which are at the present time "infesting your house so as to become a perfect nuisance" are closely allied to the small common house-fly, and which, from their smashed condition, it is almost impossible to determine specifically. They are quite incapable of stinging. We suppose they have been produced from some mass of decaying or putrefying vegetable matter. Has there been any extra washing of wine or beer barrels in your neighbourhood, as the flies resemble the common *Mosillus cellarius*?—L. O. W.

**NAMES OF FRUITS (R. W.).**—It is evidently Golden Reinette. (*T. Kennedy and Co.*)—We do not recognise the Apple sent. (*Carotus*).—Your Pear is not Chaumontel, and we are at a loss to say what it is. It has, however, the same bitter flavour which the Chaumontel sometimes has when past its prime of ripeness. Acids mixed with sugar for some time have the effect of converting it to a bitter principle. Charcoal powder has the power of destroying bitter principles; we do not know whether it would check their formation in Pears packed in it. (*J. F. Smith*).—1, White Calville; 2, Darnley's Seedling; 3, Norfolk Beefing; 4, Birmingham Pippin; 5, Delaware. (*T. F.*).—1, Shepherd's Fame; 2, Cornish Gillyflower.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### POULTRY HOUSES AND MANAGEMENT.

Five years ago I worried myself to provide roosting-house, laying-house, and sitting-house without involving myself in too large an outlay. From £17 to £20 was about the figure, but the result was not satisfactory to me; and my sole reason for being dissatisfied was, that my fowls were not thoroughly healthy. I had many that suffered from colds; and as draughts were not in the house, I could not help fancying that I was "coddling" my stock too much. During my second year two or three birds took a fancy to high trees to roost in, and I found they were strong and very healthy, laying well, and in capital condition. At the end of the second year I closed the houses altogether, and this is the third winter of my fowls roosting out in the trees about the orchard which forms their run. They are in excellent health; and out of the whole (forty-eight in number), I have not had one sick or sorry. I have watched them most narrowly, and am quite convinced that they thrive better and lay better than a similar stock did when in a warm house. No one will ever persuade me to use the houses again.

As to food, fowls will do well if they are fed with maize twice a-day and with house scraps at noon. But you must limit your adult birds to a certain quantity; and I find that one penny-worth per head per week, with the house scraps at mid-day, is ample maize to keep them in good laying condition. I give ground oats elaxed with water three or four times a-week instead of maize for a change; but I do not exceed the penny per head by alternating the food thus.

I have tried custard made of new milk and eggs for chickens, but now I never give anything beyond ground oats slaked with water, and they are as strong as when I fed them with luxuries. When a hen has hatched I at once remove her from the hedge-row where she has sat to a coop without a bottom, and set it close in front of another larger coop, in which I place four times a-day a good allowance of the slaked ground oats. The large coop has a loose board in its roof, through which the food is put, and is 3 feet deep. The young broods go through the bars in front of it to feed, and the adult birds cannot reach it. The chicks in the smaller coop soon run into the larger one, and become familiarised with the larger broods; and when a week old, if the weather is not wet, I turn hen and chicks out to take their chance, taking care that the supply of slaked ground oats in the coop is diligently attended to. The bars are sufficiently wide to allow all the young fowls of eight weeks old to creep through; and in winter, when extra food, in my opinion, is required to make up for want of sun, the bars are wider, and birds older than two months can creep through.

As regards houses for laying in, I have found that hens infinitely prefer to have their nests in the hedgerows, or under faggots, sprays, &c. I used to keep the eggs of my best fowls for setting in a tray in the dining-room, and with a wretched result as to chickens. Now I never remove them from the nest, but put a pencil mark upon them, and only remove those which are sold to be eaten, and the result is five out of six eggs are fertile. When a hen is broody I remove her in the evening to the nest where the eggs are, cover a wire frame with sacking, so as to make her new nest dark for a couple of days, and the result is five chickens out of the six eggs. In the summer I put nine eggs, in the winter six eggs under my hens.

With respect to buying eggs for breeding, I prefer to buy a pullet, and use her eggs; for only twenty chickens out of 130 bought eggs, over and over again, were a result which disgusted me. I know, too, that I was supplied with fresh eggs, but the shaking in transit addsles them.

I never "coddle" birds, young or old; but I own to giving all my young growing stock a good meal of slaked oats separate from the adults, to plump them up, and I then can always pitch

upon a fat young bird when I want them for the table. As to sorts or breeds, I keep, to please my eye, Silver-spangled Hamburgs, and think them most beautiful. I have Brahmas, pure and highly bred. (I gave 30s. for the pullets to begin breeding from). I have a grand Grey Dorking cock running with them; and thus mated, the chickens are the best layers of large eggs and the best table fowls I have ever bred. I have sold them at 8s. a-couple, and had 2/4. a-piece for the eggs all the year round. My outlay from October 1st to December 31st for corn was £2 19s., my receipts £5 4s. 4d.—C. C.

### EGGS IN WINTER.

SOME of your correspondents have sent you "experiences" of their bad luck this winter. Ours has been unprecedentedly good; and as we think we have found the best plan for ensuring winter eggs, it may be worth recording.

Eighteen pullets, hatched last March and April, began to lay in December, and have given us in the five weeks past, since December 21st, 374 eggs, with very little help from the older fowls, the week's supply ranging from sixty-two to eighty-five at a time when eggs, even in Pembrokeshire, were worth 1/4d. or 2d. They have no artificial food. Barley meal with skim milk or broth in the morning, and whole barley at night; a mid-day feed of scraps—raw mangold, or whatever comes to hand—only when snow is on the ground. A good run of field, thicket, and farmyard; a well-built hen-house, with window at each end, ventilating it during the day, and in winter closed at night. No artificial warmth. We have absolutely no sickness among the fowls from year's end to year's end, and we only lose about five per cent. of our chickens—that is, three or four among eighty. We keep about two dozen fowls. In the course of the spring we shall get rid of all our two-year-old hens except eight, which we keep till they have reared us our stock of chickens. From the eight broods we choose twelve or fifteen of the finest pullets for next winter's laying, thus keeping the stock regularly sifted, half "rising one," half "rising two" years old.

The bulk of our stock is Brahmas, and our two cocks are Brahmas. Besides, we have a few Game and three Silver Hamburgs, whose eggs we never set. Our yard supplies ourselves and our village with sittings of eggs, warranted to produce a large average of strong chickens—ten or twelve out of thirteen.

All our theory comes from your columns and Wright's "Practical Poultry-Keeper;" and our skill merely consists in common care and regular cleaning, and measured and moderate feeding, so that we wonder to hear so many in better climates than ours complain of failure. The most forcible lesson we have learnt in seven years' experience is that "favourite hens" are unprofitable—and worse, for they make poultry-keeping an intolerable, distressing business. We have in former years trained hens to the most familiar tameness; and we advise anyone who cannot help making pets of their hens to give up keeping poultry. The favourites are sure to grow fat and unhealthy—a trouble to themselves and to their masters. "Fair field and no favour" is the only rule.—A. D. C.

### REMOVING FOWLS FROM THE LATE BRISTOL POULTRY SHOW.

FEARING that the letter on the above subject, signed by "A LOVER OF FAIR PLAY," might lead exhibitors who did not attend the Show to imagine that the Committee systematically allowed birds to be taken away whenever wanted, I wish to state the reason why the pen in question was removed on Saturday morning. The pullets had been fighting early in the morning, and when the feeders arrived one was much damaged—in fact, completely scalped, and had to be removed. A gentleman soon after claimed the pen on condition that he might at once take them away and doctor the damaged pullet. The latter being in a bad state, we were glad both for our own sake and the exhibitor's to send it off. This pen, and two others sent home on account of being roopy, were the only pens that left before ten o'clock on Monday night, and any exhibitor who has ever been at our Show will corroborate me when I say that we are very strict in the observance of this rule. As the owner of the said pen of pullets admits having been to the Show, I think he or she might have inquired of the Secretary or one of the Committee the reason of the birds being removed—in fact, I have good reasons for thinking this was done—rather than try to damage our reputation by inserting such a trifling occurrence in the pages of the Journal. In reference to the latter part of the complaint, purchasers of birds often object to others knowing they have bought certain pens, and we never give the information without their consent.—E. CAMBRIDGE.

**NEW WORK ON PIGEONS.**—Messrs. Cassell, Petter, & Galpin announce a new illustrated work on Pigeons, uniform with "The Illustrated Book of Poultry." The coloured plates are to be

similar, and by the same artist. Of the text it is stated that the subject matter will be supplied by Mr. R. Fulton, the well-known dealer, assisted by various of the "fancy" fraternity, edited and arranged by Mr. Lewis Wright, the author of the "Poultry Book."

## DORKINGS AT THE KENDAL SHOW.

(From a Correspondent.)

I am fond of Dorkings, coloured ones particularly; and in my estimation they are the fowl of all others. This is my excuse for troubling you with the following remarks upon them at the Kendal Show.

Class 7, eleven entries (coloured cock any age), contained some very good birds. The first prize went to a remarkably well-feathered bird, shown in first-rate condition, but not large, and rather light—nothing like the first-prize birds of Mrs. Arkwright and Mr. White of some two or three years ago. The second prize was taken by a bird of a nice colour, smaller than the first, and with rather a twisted comb—in fact, pen 53, highly commended, should have exchanged places with him. Third-prize a very fine bird—about the best in the class, but for one fault—viz., his tail (what remained of it) having a strong inclination to touch the back of his head.

In class 8 (Silver-Gray cock, any age), seven entries, the first prize and cup went to a bird of very good colour and fair size, the second pressing very closely for first honours; third, a nice bird. The rest of the class only moderate.

Class 9 (coloured hens), eleven entries, one of the best in the Show. The first prize went to a beautiful pair of hens, well matched, good in colour and in every way, and they certainly should have had the cup awarded them. The second-prize pen contained two very good hens, a fair match in colour, but quite different in shape and style. The third-prize pen consisted of one very good hen and a middling one, rather light in colour. The unnoticed pen, belonging to the same gentleman, was, perhaps, the best in the class as regards size and shape; but unfortunately both birds had very affectionate hocks, which is a bad fault, and must in this instance have thrown them out of the prize list. The highly-commended pen, 69, will in time be heard of. They were a pair of beauties, only a little short of size, which, as they appeared young, they may gain.

Class 10, eight entries. The awards in this class were not at all pleasing, the first-prize pen showing no breeding whatever—scarcely any comb, and nothing to commend them but their good condition. Pen 82, a capital pair of hens, should have been first, No. 75 second, and the third as it was.

In the class for Dorkings, any colour (cockersl and pullet), confined to the county of Westmoreland, were some splendid specimens—notably, the first-prize and cup pen, which were of the fashionable dark colour and immense size, weighing over 20 lbs. They were also awarded the extra three-guinea cup for the best pen in all the local classes. The second-prize pen, belonging to the same lady, were equally good in colour, but the cockerel not quite so large. The third prize went to a pen of excellent Silvers, good in all points, and capable of holding their own in any company. Good sound feet prevailed in all classes.

KING'S LYNN POULTRY SHOW.—This includes Pigeons and Rabbits. Entries close on the 12th. There is one prize confined to Norfolk residents in each poultry class.

## SHOWING VERSUS BREEDING.

I was very much struck with the justice of your correspondent's remarks, in his report of the Dorking Poultry Show, on the evil practice of continuing the exhibition season into January, February, and even March. I quite agree with all he says on this subject, and for my own part have long given up exhibiting during this time, which I consider should be a close season, not only for the sake of the birds, which I fear receive very little consideration at some hands, but also for the sake of their progeny. I have but little hopes that an appeal on this subject will have any good effect, as there are dozens of exhibitors who never bred a prize chicken in their life, who have invested in a prize pen at the Palace or Birmingham, and hawk it about from show to show, thus endeavouring by false pretences to dispose of their own indifferent stock at an enhanced price. Buyers of eggs and birds should not be deceived by so shallow an artifice, but should find out who were the winners at the autumn shows, where nearly all must be exhibiting birds of their own breeding. As an enthusiast and keen lover of the feathered tribe, I have often been grieved beyond measure to see noble birds reduced to utter ruin by this continued overshooting, which is little less than cruelty to animals. "Me tum primum seivum circumstetit horror." Then, for the first time, I almost regretted that I was an exhibitor. I am sure all fanciers who are so from inclination and not from love of gain, will agree with me in saying that

February and March shows would be better stamped out.—VIATOR.

## DORKING POULTRY SHOW.

ALTHOUGH many of the classes were open to all England, we could find few exhibitors residing beyond the immediate neighbourhood of Dorking, and the Show was in effect almost a local one. We believe no positive connection can be traced between the town of Dorking and the fowls that bear its name; but the Committee appear to have adopted them, and out of thirty-two classes, twenty, with a great majority of the prizes, were devoted to this variety. The people of Dorking also appear equally interested in maintaining the purity of this breed of fowls, for on our journey from the railway station to the Public Hall, in which the Exhibition was held, we observed several poultry runs, and we were much gratified with the way in which the respective varieties appeared to be preserved. First we saw some Whites, so good that few fanciers would pass them without desiring a close inspection; further on another lot, from which we thought a selection might be made equal to any in the Show; then some good Cuckoos—or Blues, as our Dorking friends describe them—caught our eye, succeeded by others of a similar description, and in every case the particular variety appeared to be kept carefully select, and we could not find one example of the miscellaneous groups of birds that are seen elsewhere at every turn, and are usually included in the very comprehensive category of "Barn-doors."

But to return to the Show. The coloured *Dorkings* were an admirable lot, and we were particularly pleased with the pens exhibited by Mr. Ellis, and his birds throughout showed that they had come from a stock that has been judiciously selected. Some good birds were also shown by Col. Lane, Mr. Greenhill, Mr. Cheesman, and Mr. Clift. The latter gentleman exhibited two pens that were not an acquisition to the Show. The cock in one pen was so weak on his legs it was painful to see him attempt to stand; the other was swollen, and very diseased in the loe. The White *Dorkings* were inferior to the Coloured in the class for "cock and two hens." The third prize was judiciously withheld. The Blue or Cuckoo classes surprised us; in numbers they greatly exceeded our expectations, and the quality assures us that this variety is not so much neglected as is generally imagined. Pen 171 that took the first prize in the single cock class contained a magnificent specimen—rich in colour, very evenly-marked, a good-shaped rose-comb well set upon the head, no trace of white in the earlobe, and thoroughly sound on the feet; a little white was to be found in the sickles, otherwise we should have called him a perfect bird. A few classes for other varieties followed, but as in the larger number of them only a single prize of £1 was offered for competition, the entries were very limited.

In the *Brahma* class a good pen of Darks, containing a beautiful pair of pullets very evenly marked, were first; the rest, with the exception of a pen of Lights belonging to Mr. Pares, were a poor lot.

The *Spanish* class was a very inferior one, but we liked pens 219 and 228 better than the winners. Classes for *Game*, *Bantams*, *Hamburghs*, *Ducks*, &c., followed, but they were only moderate, and call for no special notice. The total number of entries was 323. We published the prize list last week, together with a report from a correspondent.

## BRIDGNORTH POULTRY SHOW.

THIS was held on the 21st and 22nd ult., and the entries of poultry and Pigeons were very good both in numbers and quality. The following are the awards:—

BRAHMAS (Light).—Cock.—1, T. A. Dean. 2, J. Bloodworth. 3, M. Leno. 4, Mrs. H. J. Baily. *vhc*, Mrs. A. Williamson. *hc*, A. O. Worthington; — Crabtree. *c*, W. Tidd; *Rev*, N. G. Ridley. *Hen*.—1, J. R. Rodbard. 2 and 3, Mrs. A. Williamson. 4, H. M. Maynard. 5, J. Mitchell. *hc*, W. Tidd; W. H. Crabtree; J. Bloodworth; A. O. Worthington. *c*, J. R. Rodbard.

BRAHMAS (Dark).—Cock.—1, A. Taylor. 2, F. Bennett. 3, R. B. Wood. 4, W. H. Crabtree. *vhc*, A. Bamford. *hc*, J. Walker; H. Lingwood; J. Watts. *c*, H. B. Morrell; W. G. Cumming; W. Bevan. *Hen*.—1, T. F. Ansell. 2, W. H. Crabtree. 3, E. Pritchard. 4, T. F. Ansell. 5, J. Watts. 6, W. Bevan. *vhc*, T. F. Ansell; J. Watts. *hc*, H. B. Morrell (2); *Rev*, J. D. Peake; Dr. J. Holmes; J. H. Kemp. *c*, H. Lingwood; — Whitehouse (2).

COCHINS (Cinnamon or Buff).—Cock.—1, T. Stretch. 2, A. Taylor. 3, W. A. Burnell. *vhc*, H. Feast. *hc*, T. A. Dean; H. Lingwood; J. Bloodworth; J. K. Fowler. 3, R. Harris. *Hen*.—1, A. Taylor. 2, Dr. W. K. Bullmore. 3, W. A. Burnell. 4, J. Wyse. *vhc*, J. Bloodworth; T. F. Ansell; A. Taylor. *hc*, W. Shaw; D. Barry.

COCHINS (White).—Cock.—1 and 3, W. Whitworth, *jao*. 2, R. W. Beachy. *vhc*, W. A. Burnell. *hc*, R. S. Woodley; Mrs. A. Williamson; C. Bloodworth; J. K. Chase. *Hen*.—1, R. W. Beachy. 2, Mrs. A. Williamson. 3, W. Whitworth, *jao*. *hc*, W. Whitworth, *jao*. *c*, C. Bloodworth.

COCHINS (Partridge).—Cock.—1 and 2, A. Taylor. 3, T. Stretch. *hc*, H. Tomlinson. *Hen*.—1 and 3, E. Tadmor. 2, T. Aspdon. *vhc*, T. Stretch. *hc*, T. Aspdon; A. Taylor.

DORKINGS (Coloured).—Cock.—1 and 3, A. Darby. 2, H. Lingwood. *Hen*.—1 and 3, A. Darby. 2, H. Lingwood.

DORKINGS (any other variety).—Cock.—1, A. Darby. 2, Countess of Dartmouth. 3 and *hc*, O. E. Cresswell. *Hen*.—1 and 3, L. Wren. 2, A. Darby. 4, O. E. Cresswell.

GAME (Black-Red).—Cock.—1, S. Field. 2, H. Horton. 3 and *hc*, A. B. Dyas; *Hen*.—1, W. J. Pope. 2, S. Field. 3, J. Mason. *hc*, P. A. Beck; J. Newdigate. H. Browne.

GAME (Any other variety).—*Cock*.—1, Miss Osborn. 2, A. B. Dyas. 3, T. P. Lyon. *Hen*.—1, Miss Osborn. 2, A. B. Dyas. 3, W. Jones.

HOUDANS.—1, W. Dring. 2, G. D. Harrison. 3, W. Whitworth, jun. 4, R. B. Wood. *hc*, W. H. Coppleston; G. W. Hibbert.

FRENCH (Any other variety).—1 and 2, R. B. Wood. 3, W. Dring. *hc*, Rev. N. G. Ridley. *hc*, E. Pritchard; H. Feast.

HAMBOURG (Gold and Silver-pencilled).—1, N. Marlor. 2, H. Beldon. 3, T. Blakeman. 4, T. Dean. *hc*, P. Widd. *hc*, Mrs. G. M. Rolles; J. Clarke; T. Bolton; I. Davies; J. Ward. *hc*, H. Feast.

HAMBOURG (Gold and Silver-pencilled).—1, W. Clayton. 2, T. Boulton. 3, H. Beldon. *hc*, P. Hanson; T. Wyllie, jun. 4, W. Speakman; E. Clayton.

HAMBOURG (Black).—1, Rev. W. Serjeantson. 2, T. W. Holmes. 3, N. Marlor. *hc*, Rev. W. Serjeantson. — *Kilvert*.

LEGHORN, D'UVERNOY, OR L'YMOUTH ROCKS.—1, Miss Mill. 2, J. Long. 3, R. R. Fowler. *hc*, Miss Hill; R. E. Ansell.

MALAYS.—1, Rev. A. G. Brooke. 2, J. S. Rooth. 3, R. Hawkins. *hc*, A. Glover, jun.; T. Harding.

POLANDS.—1, A. Taylor. 2 and 3, H. Beldon. *hc*, A. Darby; D. Mutton. *hc*, T. Dean; C. Bloodworth.

SILKIES.—1, R. S. S. Woodgate. 2, O. E. Cresswell. 3, S. P. Broad.

SPANISH.—1, J. Leeming. 2, T. Moore. 3, Mrs. E. Allsopp. *hc*, A. Darby. *hc*, E. Jackson; J. Marnell; R. Newitt. *c*, J. A. Bab.

ANY OTHER DISTINCT VARIETY.—A. Darby. 2, W. & T. Holt. 3, R. Loft. *hc*, S. B. Perry; T. A. Bond; W. Badger; J. Clark.

SELLING CLASSES (Brahmas, Cochins, or Dorkings).—*Cock*.—1, J. K. Fowler. 2, W. Beachy. 3, A. F. Sparkes. 4, A. Darby. 5, R. O. Anwyl. 6, Rev. R. W. Everett. 7, J. Benton. 8, T. A. Dean. 9, W. G. Patchett. 10, H. Yardley. 11, H. B. Morrell. *Hens*.—1, J. Watts. 2, R. W. Beachy. 3, W. A. Burnell. 4, W. Badger. 5, J. Benton. 6, T. A. Dean.

SELLING CLASSES (Any other variety except Bantams).—*Cock*.—1, J. Andrews. 2, J. F. Silhouette. 3, E. Jackson. 4, W. Foster. *hc*, G. Berry. *Hens*.—1, J. Leeming. 2, T. Moore. 3, W. Foster.

SELLING CLASS (Bantams).—1, T. Barker. 2, W. F. Entwistle. 3, R. Wingfield. 4, — Ashley.

GAME BANTAMS (Black Red).—1, R. Youll. 2, W. F. Entwistle. 3, Wingfield and Andrews. 4, G. Langford.

GAME BANTAMS (Any other variety).—1 and 2, W. F. Entwistle. 3, J. Long. *hc*, E. Payne; R. J. Lloyd-Price; Wingfield & Andrews; R. Youll.

BANTAMS.—1 and 3, M. Leno. 2, W. Robinson. *hc*, R. S. S. Woodgate; Rev. W. Serjeantson. *hc*, Miss M. Whitmore; R. Wingfield; A. Taylor.

TURKEYS.—1, M. Kew. 2, Mrs. Parsons. 3, Countess of Dartmouth. *hc*, Mrs. A. Line. *hc*, — Cherrington; F. E. Richardson; Miss Hotchkiss; J. Lynch; J. V. V. A. Rev. N. G. Ridley. 4, E. Kendrick, jun.; R. Macalister.

GEES.—1, R. J. L. Price. 2, M. Kew. 3, Mrs. H. J. Bailey.

DUCKS (Aylesbury).—1, J. K. Fowler. 2, T. Bolton. 3, Dean & Son.

DUCKS (Rouen).—1, Rev. J. J. Evans. 2, E. Kendrick, jun. 3, W. Whitehead. *hc*, W. H. Houghton.

DUCKS (Black).—1 and *hc*, Rev. W. Serjeantson. 2, G. S. Sainsbury. 3, J. J. Mutton.

DUCKS (Any other variety).—1, W. Bontcher. 2, Rev. W. Serjeantson. 3, M. Leno. *hc*, M. Leno; H. B. Smith.

DUCKS (Any variety).—1, Rev. W. Serjeantson. 2, R. Macalister. 3, A. Haslam.

LOCAL CLASS (Any variety).—1, — Baker. 2, Mrs. J. S. Ireland. 3, C. Devereux. 4 and 6, T. Tones. 5, W. Warner. *hc*, J. Roberts.

PIGEONS.—SINGLE BIRDS.

ANTWERPS.—1, W. Slater. 2, T. Bristol. 3, T. Edwards, jun. 4, — Gamon.

CARRIERS.—*Cock*.—1 and Cup, H. Yardley. 2, P. R. Spencer. 3, J. E. Spence. *hc*, J. E. Spence; J. F. Hinck. *Hen*.—1 and 2, P. R. Spencer. 3, W. P. Keill.

POUTERS.—1, P. R. Spencer.

BARS.—1 and Cup, H. Yardley. 2, W. Townson. 3, G. W. Dutton. *hc*, L. Roach. *c*, P. R. Spencer.

DRAGONS.—1 and 2, W. Smith. 2, W. Gamon. *hc*, W. Gamon; Mrs. S. Cliff; J. Kendrick; S. Salter. H. Yardley.

FANTAILS.—1 and *hc*, Rev. W. Serjeantson. 2, H. Yardley. 3, Q. T. Bluhm. 4, J. E. Spence.

JACOBS.—1, O. E. Cresswell. 2, P. Hickman. 3, Rev. A. G. Brooke.

MAGPIES.—1, C. G. Hitchcock. 2, J. Watts. 3, M. Ord. *hc*, C. G. Hitchcock; T. Hocks.

PIGNS.—1 and 2, W. Croft. 3, Rev. A. G. Brooke. *hc*, W. Croft; Rev. A. G. Brooke.

OWLS.—1, Cup, and C. W. Townson. 2, Van Senden. 3, W. Tedd. *hc*, A. Darby. 4, A. Barnes; Van Senden.

TERRITS.—1 and 3, W. Croft. 2, S. Salter. 4, 5, and 6, O. E. Cresswell. 7, P. A. Riddell.

TRUMPETERS.—1, J. Lederer. 2, — Pearce. 3, P. R. Spencer.

TOMBLERS.—1, Cup, and 2, H. Yardley. 3, J. Fielding, jun. *hc*, J. Kendrick; J. Peace.

ANY OTHER VARIETY.—1, M. Ord. 2 and 3, H. Yardley. *hc*, W. Tedd; M. Ord.

PAIRS.

ANY VARIETY.—1, J. Peace. 2, J. Watts. 3, P. R. Spencer. 4, A. Darby. 5, H. B. Wolryche.

JUDGES.—*Poultry*: Mr. R. Teebay and Mr. J. Douglas.

*Pigeons*: Mr. Esquilant.

## WOLVERHAMPTON POULTRY SHOW.

THIS was held on January 30th and 31st, and the 2nd inst. in Agricultural Hall. The following are the awards:—

DORKINGS.—Coloured, except Silver Grey.—1 and Extra, J. Walker, Rochdale. 2, L. Patton, Hillmore, Taunton. 3, J. Copple, Prescott. *Silver-Grey*, and any other variety except Coloured.—1, J. K. Fowler, Aylesbury. 2, W. W. Rutledge, Kendal. 3, J. Robinson, Garstang.

COCHIN-CHINA.—Cinnamon and Buff.—1, Extra, and 2, W. A. Taylor, Manchester. 3, W. H. Crabtree, Levenshulme. *hc*, H. Lacy, Hebban Bridge; W. H. Crabtree. *Cock*.—1, W. A. Burnell, Southwell, Notts. 2, W. A. Taylor. 3, H. Tomlinson, Gravelly Hill, Birmingham. *Pullet*.—1 and 2, W. A. Taylor. 3, H. Goodfellow, Madeley. *hc*, C. Bloodworth, Cheltenham; T. Groves, Shrewsbury. *c*, J. Watts, King's Heath, Birmingham.

COCHIN-CHINA.—Brown and Portridge-feathered.—1 and 2, T. Stretch, Ormskirk. 3, W. A. Taylor. *Cock*.—1 and 2, E. Tudman, Whitechurch, Salop. 3, W. A. Taylor. *hc*, Hon. Mrs. Sugden, Wells; E. Tudman. *Pullet*.—1, W. A. Taylor. 2, Hon. Mrs. Sugden. 3, W. H. Crabtree. *hc*, Rev. R. Story, Leighton Wicar, Leighton. *hc*, — Wolverhampton; E. Tudman.

COCHIN-CHINA.—White.—1, W. A. Burnell. 2 and 3, W. Whitworth, Longsight, Manchester. *hc*, R. W. Beachy, Flydder, Kingskerswell.

BRAMMAS.—Dark.—1 and Extra, Newnham & Mauby, Wolverhampton. 2, W. A. Taylor. 3, Horace Lingwood, Creeting, Needham Market. *hc*, F. Bennett, Shifnal. *hc*, T. F. Ansell, Cowley Mount, St. Helena; F. J. Cotterill, Birmingham. *hc*, W. H. Crabtree; J. H. Jones, Handforth; H. Lacy; J. Watts. *Cock*.—1, Horace Lingwood. 2, W. A. Burnell. 3, W. A. Taylor. 4, W. A. Burnell. 5, Miss Phillips, Bushbury Hill, Wolverhampton. 6, Newnham & Mauby. *hc*, E. Pritchard, Tettenhall. *Pullet*.—1, Horace Lingwood. 2, H. Langman, Wolverhampton. 3, W. Birch, Barnacle, Coventry. 4, Dr. Holmes, Whitecotes, Chesterfield. *hc*, Horace Lingwood. *hc*, E. Pritchard; F. Bennett; W. H. Crabtree; Newnham & Mauby; Miss Phillips.

BRAMMAS.—Light.—1, J. Bloodworth. 2, J. R. Rodbard, Wrington, Bristol. 3, Mrs. A. Williamson, Leicester. *hc*, M. Leno, Markyate Street. *hc*, R. Bird,

Fulham; W. Tedd, Erdington. W. H. Crabtree. *Cock*.—1 and Extra, T. A. Dean, Marden, Hereford. 2, Mrs. H. J. Bailey, Tenbury. 3, M. Leno. 4, F. J. Cotterill. *hc*, J. H. Butler, Erdington. *Pullet*.—1 and 2, T. A. Dean. 2, Mrs. A. Williamson. 4, W. H. Crabtree. *hc*, W. Tedd. *c*, R. Bird; Mrs. H. J. Bailey.

HOUDANS.—*Cock*.—1, G. D. Harrison, Datchet. 2, W. Dring, Faversham. 3, W. Whitworth, jun. *hc*, R. B. Wood, Uttoxeter. *c*, Mrs. H. J. Bailey. *Hen*.—1, W. Dring. 2 and 3, R. B. Wood. *hc*, D. Lane, Hardwick, Gloucester. *hc*, J. French, Melford, Mowbray. *c*, G. D. Harrison. *hc*, R. A. Boisier, Rushurst; Lady G. Vernon, Croftwich. D. Lane; J. K. Fowler. W. Whitworth, jun.

CREVE-CEUR.—*Cock*.—1, Extra, and 2, R. B. Wood. 3, W. Dring. *c*, E. Pritchard. *Hen*.—1, R. B. Wood. 2, E. Lantour, Hexton, Amthill. 3, W. R. Park, Melrose. *hc*, W. Dring. *hc*, J. K. Fowler. *c*, J. French; R. B. Wood; J. J. Malden, Higgleswade.

SPANISH.—*Cock*.—1, E. Jackson, Fitchfield, Wolverhampton. 2, J. Walker, Sandford. 3, J. Barry, Bristol. *hc*, J. R. Rodbard (2). T. Moore; J. Leeming, Broughton. *hc*, R. P. Hickman, Upper Penn; W. Smallwood, Springfield, Wolverhampton. *Hen*.—1, T. Moore, Cardiff. 2, J. Leeming. 3, J. Walker. *hc*, Mrs. E. Allsopp, Hindlip Hall. *hc*, H. Wynne, Martia Haslingtree; J. F. Silhouette, Wolverhampton.

GAME.—Black Red.—*Cock*.—1, C. Chaloner, Whitwell, Chesterfield. 2, D. Harley, Edinburgh. 3, J. Forsyth, Wolverhampton. *hc*, T. Whittaker, Melton Mowbray; J. Fletcher, Stoneclough; R. Price, Rhineas; J. Forsyth. *c*, J. Palmer.

GAME.—Broken Red.—*Cock*.—1, W. Boulton, Dalton-in-Furness. 2, G. C. Wilson, Milnthorpe. 3, D. Harley. *hc*, J. Forsyth (2); J. Cock, Worcester; Lunt & Russell, Market Drayton.

GAME.—Excepting Broken and Black Reds.—*Cock*.—1, W. C. Phillips. 2, W. Adams, Ipswich. 3, E. Bell, Burton-on-Trent.

ANY VARIETY.—*Cock*.—1 and Cup, S. Matthew, Stowmarket. 2, J. Fletcher, S. Chichester. *hc*, C. Chaloner; J. P. Smith, Wednesbury. *Hen*.—1, G. C. Wilson. 2, R. Price. 3, P. A. Beck. *hc*, J. Cock. *hc*, C. Myrora, Sandbury, Derby.

POLANDS.—1, H. Feast, Swansea. 2, W. Silvester, Sheffield. 3, G. C. Adkins, Lightwoods, Birmingham. *hc*, H. Beldon, Gostock. *hc*, G. C. Adkins; C. Bloodworth. *c*, W. A. Taylor; T. Webb, Sutton.

HAMBOURG.—Gold-spangled.—1, H. Beldon. 2, T. Boulton, Handford. 3, G. A. J. Duckworth, Church, Lea, Buckley, Tadworth, Ashburton, Lymington. 4, C. Parsons, Birmingham. G. & J. Duckworth. *Silver-spangled*.—1, H. Beldon. 2, C. Parsons. 3, W. R. Park. *c*, J. Robinson.

HAMBOURG.—Gold-pencilled.—1, G. & J. Duckworth. 2, H. Beldon. 3, C. Bloodworth. *c*, Miss C. Lancaster, Rogby; J. Mayo, Oxford. *Silver-pencilled*.—1, H. Beldon. 2, W. Meanley, Handsworth. 3, T. Boulton. *c*, H. Feast; M. M. Cashmore, Loughborough.

HAMBOURG.—Black.—1, Rev. W. Serjeantson, Acton Burnell. 2, H. Beldon. 3, M. K. Kivert, Wey. *hc*, C. Nixon, Longton. 4, T. Bush, Bristol (2).

BANTAMS.—Game.—1, J. Fletcher. 2, J. Forsyth. 3, W. Adams. *hc*, T. Hassall, Market Drayton. *c*, T. Edwards, jun. Tettenhall; M. S. Rubery, Bloxwich. *White or Black, Clean-legged*.—1, W. H. Shackleton, Bradford. 2, J. Bloodworth. 3, J. Walker. *hc*, R. H. Ashton, Mottram. *hc*, H. Beldon. *Except Game and White or Black*.—1, M. Leno. 2, J. Walker. 3, R. S. S. Woodgate, Pembury, Tunbridge Wells. *hc*, M. Leno. *hc*, P. Foxhall, Worcester. *c*, H. B. Smith, Broughton, Preston; J. Watts.

ANY OTHER VARIETY.—1, Rev. N. J. Ridley, Newbury. 2, H. Feast. 3, Rev. A. G. Brooke, Shrawardine. *hc*, W. & T. Holt, Church. *hc*, R. S. S. Woodgate; G. E. Sawdon, Sutton Crosshills. *c*, W. & T. Holt.

SELLING CLASS.—Brahmas, Dorkings, and Cochins.—*Cock*.—1, Rev. A. Van Stranzenze, Tettenhall Vicarage. 2, H. Tomlinson. 3, J. H. Jones. 4, F. Bennett. *hc*, F. Bennett; D. Macdonald, Bromsgrove; J. Watts; W. A. Burnell (2); H. Beldon. *White*.—1, R. W. Beachy. 2, R. W. Beachy. *c*, J. Leno; J. H. Butler; Miss Phillips; J. Longland. *Hens*.—1, H. C. White. 2, E. Pritchard. 3, H. Langman. 4, H. Tomlinson. *hc*, F. Bennett (2); W. Whitworth, jun.; J. Benton, Erdington; H. Feast; J. Watts; M. Leno.

SELLING CLASS.—Excepting Brahmas, Dorkings, or Cochins.—*Cocks*.—1, J. F. Silhouette. 2 and 4, Mrs. W. Chalmers, Hallybarton, Conpar Angus. 3, H. Beldon. *c*, H. C. White; W. H. Crabtree; H. Feast. *Hens*.—1, W. McElm, West Glasgow. 2, J. F. Silhouette. 3, Miss Browne, Chardleigh Green. 4, C. E. Woodworth. *hc*, W. Birch; W. H. Crabtree. *c*, J. Jarrett, Wolverhampton. W. W. Rutledge.

TURKEYS.—1, J. Walker. 2, E. Kendrick, jun. Lichfield. *hc*, L. Patton. *hc*, F. E. Richardson, Bramshall. *c*, Mrs. H. Smith, Kingswinford.

GEES.—1, W. Cookson, Oswestry. 2, Mrs. H. J. Bailey. *hc*, J. K. Fowler. *hc*, R. Price.

DUCKS.—Aylesbury.—1, Mrs. Wooton, Mapperley, Notts. 2, J. K. Fowler. *hc*, and *c*, J. Walker. *hc*, Mrs. P. S. Chinn, Sandfield, Lichfield. *Rouen*.—1, R. Gladstone, jun. Broadgreen, Liverpool. 2, E. Kendrick, jun. *hc*, W. Evans, Prescott. *hc*, R. Gladstone; J. Walker. *c*, W. Stephens, Gloucester.

W. N. Whitehead, Birmingham; J. Walker. *Call*.—1 and *hc*, Mrs. H. J. Bailey. 2 and 3, R. Gladstone, jun. *hc*, J. Walker. *c*, H. Beldon. 2, Wakefield. *Excepting Rouen, Aylesbury, and Call*.—1, J. E. Morris, Helsdale (Arolina). 2 and *hc*, H. B. Smith. 3, — Wooton (East Indian). *hc*, J. E. Morris (Widgeon Pautal) (2). *c*, J. Lippitt, Onby (White Muscovy); J. Walker (2); M. Leno.

PIGEONS.

TOMBLERS.—Extra 1, H. Yardley, Birmingham. 2, J. Fielding, jun. *hc*, E. H. Pratt, Harwood.

FANTAILS.—1 and 2, Rev. W. Serjeantson, Acton Burnell. *hc* and *hc*, J. F. Loversidge, Newark.

CARRIERS.—Single Birds.—Extra 1 and 2, E. Horner. *hc*, H. Yardley. *hc*, E. C. Stretch, Ormskirk.

DRAGONS.—1 and 2, W. Gamon, Chester.

ANTWERPS.—1, Extra, and 2, W. Gamon. *hc*, J. Cox, Wolverhampton; T. Chole, Birmingham; H. Gough, Wolverhampton; H. Yardley, Woking. *Working*.—1 and 2, J. Sparrow, London. *hc*, H. Jennings, Allerton, Bradford (2).

PIGNS.—1 and 2, including a donation from the Rev. A. G. Brooke, Rev. A. G. Brooke.

OWLS.—Extra 1, F. Wild, Hyde. 2, T. W. Townson, Bowdon. *hc*, H. Yardley; W. Tedd.

TERRITS.—1, H. Yardley. 2, E. Horner. *hc*, S. Salter, Egrove (2); T. W. Townson.

POUTERS.—Single Bird.—1 and *hc*, Mrs. Ladd, Calne. 2, E. Horner. *hc*, E. Horner; H. Pratt, Knowle.

ANY OTHER VARIETY.—Extra 1, H. Yardley. 2, W. T. Breddon, King's Heath. 3, J. Lederer, Bootle. *hc*, H. Yardley; E. Horner.

SELLING CLASS.—1, Mrs. Ladd. 2, J. V. Edge, Erdington. 3, J. Watts. *hc*, J. Walker, Burslem.

JUDGES.—Rev. G. F. Hodson, North Petherton, Bridgwater; Mr. E. Teebay, Fulwood, Preston; Mr. S. Burn, 1, East Terrace, Whitby; Mr. F. C. Esquilant, 4, Effra Road, Brixton, London.

## FAKENHAM POULTRY SHOW.

THE fourth annual Exhibition of the Fakenham and West Norfolk Poultry Club was held on the 3rd and 4th instant, in the well-lighted and ventilated Corn Hall, and attracted the attention of the public beyond the expectation of the most confident, the weather not being all that could be desired. The arrangements were good and well carried out by an ener-

getic working Committee and Secretary. The entries numbered 638, an increase of a hundred or so over the last year's Show, and in each of the classes the quality was very good and the competition severe. Cut straw and chaff were the substitutes for sawdust for the pens, which were cleaned out daily before the public were admitted, and every attention possible was paid to the welfare of the poultry, &c.

There was a good representation of the different classes comprised in the schedule, some of which merited special attention, especially the *Dorkings*, *Cochins*, and *Game*, and the decision of the Judges, except in one or two cases, was satisfactorily received. The silver cup, value £5, presented by the President of the Club (the Marquis Townshend), for the best pen exhibited by a county resident in the various classes for Game, Hamburgs, Malays, Spanish, and Bantams, was taken by an excellent specimen in the class for Game; and the cup of the same value, presented by Lord Hastings, for the best pen exhibited by a county resident in the classes for Dorkings, Cochins, Brahmas, French fowls, Any other variety, Ducks, Turkeys, and Geese, was well taken by a fine Coloured Dorking cock.

The *Pigeons* were quite up to the mark, and the prizetakers well deserved their awards, especially those in the classes for Carriers, Pouters, Barbs, and Tumblers.

The *Song Bird* classes were well filled and attracted considerable attention, especially the Canaries.

The *Rabbits* exhibited looked well, and the successful competitors merited their distinctions.

The following is the list of awards:—

**DORKINGS** (Coloured).—Cock.—County Cup, and 1, Rev. E. W. Dowell, Duncton Rectory, Fakenham. 2, Henry Lingwood, Barking, Needham Market, *vhc*, Mrs. B. B. Sapwell, Aylsham. *hc*, Major C. J. Ewen, Marlingford Hall, Norwich. *Hens*.—County and *vhc*, E. W. Southwood, Fakenham. 1, Henry Lingwood. 2, F. Parlett, Great Baddow. *hc*, Rev. T. Wren, Heybridge, Maldon. 3, Cheesman. *c*, Rev. E. W. Dowell; T. C. Burrell, Micheldever; Major C. J. Ewen; E. W. Southwood (2); A. Darby, Bridgorth.

**DORKINGS** (Any other variety).—Cock.—County and 2, T. & H. Heath, Norwich. 1, O. E. Cresswell, Early Wood, Bagnish, *hc*, Rev. R. T. Tearle, County Victoria, Bury. 2, J. D. Gwydyr. 2, G. H. Proctor, County. *Hens*.—County and 2, L. Wren, Lowestoft. *hc*, O. E. Cresswell, *c*, A. Darby.

**COCHINS** (Cinnamon or Buff).—Cock.—County, Major Bignold, Norwich. 1, Lady Gwydyr, Ipswich. 2, Henry Lingwood. *hc*, Major Bignold (2). *c*, J. Watson, Cingleford. 3, J. S. Pearson, Great Melton (2); Major Bignold (2).

**COCHINS** (Any other variety).—Cock.—1, Lady Gwydyr. County and 2, Major Bignold. *hc*, R. S. Woodgate, Pembury, Tunbridge Wells; W. M. Rackham, Norwich; W. Alley, Leeds. *Hens*.—1, Lady Gwydyr. 2, G. H. Proctor, County. *hc*, Major Bignold (2); Mrs. E. Pryor, *c*, J. E. Bly, Major Bignold; J. Bone, North Elmham; H. J. Gannell, Milton; G. F. Bentley, Linton. *c*, J. Watson.

**BRAMMAS** (Dark).—Cock.—1, Lady Gwydyr. County and 2, W. Branton. *vhc*, Col. Cockburn, Bracendale; Horace Lingwood. *hc*, Mrs. E. Pryor; Major C. J. Ewin; W. R. Garner, Dyke; J. S. Pearson; W. Branton, East Dereham. *c*, E. H. Willett; H. R. Platten, *vhc*; Newham & Mauby; E. Bircham, Fast Dereham. *Hens*.—County and Cup, Horace Lingwood, Creeting. 2, E. H. Willett. County and 2, J. S. Pearson, *c*, Mrs. E. Pryor; C. Wima; Rev. J. D. Peake, Laleham Vicarage (2). *c*, Rev. B. Brereton.

**BRAMMAS** (Light).—Cock.—1 and County, J. P. Case, Fakenham. 2, P. Haines. *vhc*, Horace Lingwood. *hc*, H. Savory, Field Dalling. *c*, H. Watson; J. P. Case. *Hens*.—1, P. Haines. 2, Mrs. F. Cheshire, Acton. County, J. P. Case. *vhc*, J. P. Case; Horace Lingwood. *hc*, J. P. Case; E. Mayston. *c*, H. H. Rush.

**GAME** (Brown-Red).—Cock.—2 Cups, County, 1, and 2, H. E. Martin. *hc*, J. J. Keen, Elmham. *c*, J. J. Keen.

**GAME** (Black-Red).—Cock.—1, J. R. Fletcher, Stoneclough. 2, J. Mason. County and *hc*, H. E. Martin. *vhc*, J. Forsyth, Wolverhampton.

**GAME** (Black and Brown-Red).—*Hens*.—1, H. L. Cockedge, Woolpit. 2 and County, H. E. Martin. *vhc*, F. Sales, Crowle. *hc*, H. E. Martin (2); J. Keen; J. F. Walton.

**GAME** (Any other variety).—Cock.—1, F. Sales. 2, J. F. Walton. County, H. E. Martin. *hc*, H. L. Cockedge; J. R. Fletcher; E. W. Southwood; J. F. Martin (3). *Hens*.—1, F. Sales. 2 and County, G. F. Tricker. *vhc*, J. F. Walton. *hc*, H. E. Martin.

**HAMBURG** (Golden-spangled).—1 and Cup, Furness & Sudall. 2 and County, H. R. Pithon, *jun*, Fakenham.

**HAMBURG** (Golden-pencilled).—1, Furness & Sudall. 2 and County, H. T. Coldham, King's Lynn. *hc*, O. E. Cresswell.

**HAMBURG** (Silver-spangled).—1, Ashton & Booth, Mottram. 2 and County, B. R. Platten, *jun*, *vhc*, J. S. Pearson, Lowestoft. *hc*, H. T. Coldham.

**HAMBURG** (Black).—County and 1, T. A. Wright, Yarmouth. *hc*, W. Cutlack, *jun*, Littleford; J. P. Case; R. S. Woodgate. *c*, Furness & Sudall.

**MALAYS**.—County, E. Branford. 1 and Cup, J. F. Walton. 2, S. B. Perry. *hc*, Rev. N. J. Bidley; E. Branford; Rev. A. G. Brooke, Shirwadine (2); J. S. Rooth, Chesterfield; S. B. Perry, Lynton; F. Harding. *c*, E. Branford, Whitsona (2); J. S. Rooth.

**SPANISH**.—County and *hc*, Hon. M. Milles, Elmham Hall. 1, F. James, Peckham Rye. 2, Furness & Sudall.

**FRENCH**.—County, Major C. J. Ewen. 1, W. Cutlack, *jun*. 2, Rev. N. J. Bidley, Newbury. *hc*, Miss J. Leathe, Fakenham; Major C. J. Ewen; J. W. Atkin, Eoston.

**ANY OTHER VARIETY**.—County, Major C. J. Ewen (Poland). 1, G. W. Boothby (Golden-spangled Poland). 2, Rev. N. J. Bidley (White Leghorn). *hc*, A. Smith (Red Indians); Major C. J. Ewen (Cuckoo), *c*, Mrs. C. North, Rougham Hall (Hibb). T. L. Nash, Sproughton (Silkie).

**SELLING CLASS**.—Cock.—O. E. Cresswell (White Cochins); Furness and Sudall (Cochin). 2, T. M. Derry, Gedney (Partridge Cochins). Extra 2, Rev. W. Barlow (Coloured Dorking). 3, Lady Gwydyr. 4, J. S. Pearson (Buff Cochins). *hc*, Major C. J. Ewen (Poland); W. Branton (Buff Cochins); J. P. Case (Black Hamburg); C. Deuton, Lowestoft (Golden-spangled); T. L. Nash (Dark Brahma and Buff Cochins); P. Haines, Fakenham (Light Brahma); Major Bignold (Buff Cochins); W. Wren (Brahms); J. E. Bly (Silver-spangled Hamburgs); *c*, W. Graves, Fakenham (Golden-pencilled Bumpless); J. Wright (Brahma); H. J. Gannell (Creve-Cœur); W. Branton (Buff Cochins); G. P. Tricker (Black Red and Duckwing Game); J. Bone (Cochin-China); R. S. Norgate (Dark Brahma); J. F. Walton (Fife Game); Col. Cockburn (Spanish).

**SELLING CLASS**.—*Hens*.—1, Major C. J. Ewen (Black Spanish). Extra 1, Lady Gwydyr. 2, R. Gader, Burgham, Thorpe (Coloured Dorking). Extra 2, T. L. Nash (Dark Brahma); J. S. Pearson (Brahms); J. E. Bly (Silver-spangled Hamburgs); *vhc*, J. Bone (Cochin-China); T. L. Nash (Dark Brahma); *hc*, Rev. F. Tearle (Dark Brahma); A. S. Wales (Black Bantam); W. Woodhouse, King's Lynn (Spanish). *c*, T. & H. Heath; R. S. Norgate; T. L. Nash; Miss J. Leathe (Creve-Cœur) (2); T. Sparr (Light Brahma).

**BARNDORF OR CROSS-BRED**.—1, W. Nicholson, Brisley Hall. 2, H. Savory. *c*, E. O. Butcher, Fakenham; H. R. Pithon, *jun*.

**ANY OTHER VARIETY** (Black and Brown Red).—County and *vhc*, T. J. Miller, *jun*. 1, Mrs. E. Newbitt. 2, W. F. Entwistle. 3, J. Eaton. *hc*, F. E. Turner, East

Dereham; J. S. Pearson; W. Adams, Ipawich; W. B. Jeffries. *c*, T. J. Miller, *jun*; Mrs. C. North; W. Southwood.

**GAME BANTAMS** (Any other variety).—County, W. Southwood, Fakenham. Cap and 1, W. F. Entwistle. 2, J. Eaton. *c*, F. F. Cooper; W. Southwood.

**BANTAMS** (Nautilus).—County and 1, E. Branford. 2, O. E. Cresswell.

**BANTAMS** (Any other variety, except Game and Nankin).—County, J. S. Pearson. 1, E. H. Ashton, Mottram; T. J. C. Rackham. 2, T. E. Thistle, Lowestoft; M. Leno, Markyate Street. 3, J. C. Burton, Fakenham. *vhc*, C. Reed; E. Walton. *hc*, Mrs. C. North; R. Tiltow, Halesworth; J. R. Fletcher; W. Lidgard, Barton-on-Humber. *c*, H. Watson.

**DUCKS** (Aylesbury and Bontu).—County and 1, J. N. Waite. 2, W. Nicholson. *hc*, H. C. Bouter, East Rudham (2); Rev. W. F. Dixon, Brooke Vicerage; J. N. Waite, *c*, J. Gannell.

**DUCKS** (Any other variety).—County and 1, Mrs. T. J. C. Rackham, Catton. *c*, M. Leno; Mrs. T. J. C. Rackham.

**TURKEYS**.—County, J. W. Sharmen. 1, H. J. Gannell. 2, M. Kew, Market Overton. *hc*, J. W. Sharmen; R. D. Savory; T. M. Derry.

**GESE**.—County and 2, Hon. M. Milles. 1, T. M. Derry. *hc*, J. N. Waite (2); A. Cracknell, Bauham; J. W. Sharmen.

#### PIGEONS.

**CARRIERS**.—County and Cup, J. H. Pettit, Yarmouth. 1 and 2, W. Minson, St. Ives. *hc*, L. Wren.

**PORTERS**.—County and 12, H. Thurlow, Burnham Market. 1 and Cup, Mrs. Ladd, Calne. *hc*, A. Baker, Downham Market; Mrs. Ladd; N. Hill, Ealing. *c*, A. Baker.

**BAKERS**.—1, H. Thurlow. 2, C. Norman, Westerfield. *hc*, W. B. Mapplebeck, *jun*. *c*, J. H. Pettit (2).

**TUMBLERS** (Balds).—County, W. Woodhouse. 1, J. Ford, Monkwell Street, London. 2, W. Pawcett, Balldon. *hc*, W. Woodhouse; G. & W. Banna, Lowestoft. *hc*, C. Cowles, Lowestoft.

**TUMBLERS** (Bears).—County, 1, and 2, W. Woodhouse. *hc*, C. Cowles (2).

**TUMBLERS** (Any other variety).—County and *vhc*, C. Wasey, South Creake. 1, J. Ford. *hc*, W. B. Mapplebeck, *jun*.

**FANTAILS**.—County and *hc*, F. Aldiss, Walsingham. 2, W. H. Tomlinson. *hc*, J. F. Loversidge. *c*, J. F. Loversidge, Newark; W. H. Tomlinson.

**DRAGONS**.—County and Cup, H. Thurlow. 1, W. H. Mitchell, Moseley, Birmingham. 2, A. W. Wren. *vhc*, W. H. Mitchell (2). *hc*, W. B. Mapplebeck, *jun*; W. V. Longe, E. Aldiss. *c*, J. Juler.

**ANTWERPS**.—County and 1, H. Thurlow. 2, A. R. Burrell, Cambridge. *hc*, W. H. Mitchell. *c*, E. H. Southwood.

**ANY OTHER VARIETY**.—1, A. Manders, Lynn. 2, F. Aldiss. *hc*, J. Ford.

**SELLING CLASS** (Any variety).—1, A. W. Wren. 2, Mrs. Ladd. 3, G. J. Leany, Lawca. *vhc*, H. Thurlow. *hc*, G. J. Leany (2). *c*, W. V. Longe; G. J. Leany.

#### CANARIES.

**CLEAR YELLOW**.—1, Bemrose & Orme, Derby. *vhc*, Bemrose & Orme. *hc*, B. Broadwater, Trowse Newton; H. Larke, Norwich; J. & G. Mackley, Norwich; Alden & Havers, Norwich.

**CLEAR BUFF**.—1, 2, and *vhc*, Bemrose & Orme.

**EVENLY-MARKED YELLOW**.—1 and 2, Bemrose & Orme. *vhc*, J. & G. Mackley; Bemrose & Orme.

**EVENLY-MARKED BUFF**.—1, 2, and *vhc*, Bemrose & Orme. *hc*, J. & G. Mackley. *TICKED AND UNEVENLY-MARKED* (Yellow or Buff).—1 and 2, Bemrose & Orme. *vhc*, J. & G. Mackley (2); Bemrose & Orme (2). *hc*, H. Larke.

**CRESTED** (Yellow or Buff).—1, J. & G. Mackley. 2 and *c*, Bemrose & Orme. *vhc*, J. & G. Mackley; Alden & Havers.

**CINNAMON** (Yellow or Buff).—1, Bemrose & Orme. 2, J. & G. Mackley. *vhc*, E. Jarrett, Lynn; J. & G. Mackley (2); R. Poole, Malden; Bemrose & Orme. *hc*, R. Poole (3); Bemrose & Orme.

**YORKSHIRE** (Clear or Variegated, Yellow or Buff).—1 and *vhc*, L. Belk, Dewsbury. 2, J. & G. Mackley. *hc*, E. Jarrett.

**ANY OTHER VARIETY**.—1, J. & G. Mackley. *vhc*, E. Jarrett; Cuthbertson and Masson, King's Lynn; J. & G. Mackley; Bemrose & Orme. *hc*, L. Belk; J. & G. Mackley (3).

**BRITISH SONG BIRDS**.—1 and 2, J. & G. Mackley (Bullfinch and Blackbird). 3, Alden & Havers (Bullfinch). *vhc*, J. Newland, Fakenham (Bullfinch); Alden & Havers (Goldfinch). *hc*, G. Richardson, Fakenham (Thrush); N. Aldis (Goldfinch); W. E. Barniston, Middlesbrough (Bullfinch and Bramblingfinch). J. & G. Mackley (starling).

**SELLING CLASS**.—1 and 2, Bemrose & Orme. 3, L. Belk. *vhc*, H. Larke (2); J. & G. Mackley. *hc*, G. Richardson (2); E. Jarrett, Fakenham (3); W. E. Barniston (2); J. & G. Mackley; E. Patrick, Fakenham.

#### RABBITS.

**LOP-EARED**.—County and 2, F. J. Smith, East Dereham. Cup, 1, and *vhc*, F. Banks, Doughty St., London. *hc*, T. Wild, Walsingham; J. Cratch.

**ANY OTHER VARIETY**.—County, F. J. Smith (Angora). 1 and 2, B. W. Mason, Hull (Silver-Grey and Black-and-White). 3, W. H. Tomlinson (Himalayan). *hc*, J. Hallas, Huddersfield; W. H. Tomlinson, Newark (Himalayan); Mrs. Fassingham, Milton (Dutch).

**JUDGES**.—Mr. E. Hutton, Rev. E. Fellowes, and Mr. H. Thurlow.

#### NOMENCLATURE OF PIGEONS.

"TURKEY QUILL" being in his last rather more definite, I can be so too; but all I could clearly gather from his first letter was that he supposed me by "silver-dun" to mean the silver barred with dun of the Antwerp breeders, which I did not mean. I was also unwilling to enter into the matter at any length, because I do not think that to find fault with a description of any particular bird, in utter ignorance of the bird itself, and whether the description was really correct or not, is the proper way of opening any such general discussion as that of the correct nomenclature of Pigeons, which is quite capable of being discussed in a general manner. Had "TURKEY QUILL" seen the bird, and, having seen it, considered my description wrong, his course would have been legitimate enough. I will now, however, clear up the matter as far as I can, and if he still considers me wrong, have no wish to complain.

My own recollection of the hen would be, a very pale, or what I would call "silvery" dun ground colour all over, chequered or rather grizzled with silver on the shoulders of the wings. Being, however, anxious to make no mistake, I have applied to the breeder and exhibitor, who writes me that she has a silver ground, the body feathers being ticked with dun. (I may add that this gentleman himself, when, surprised at seeing her in a Blue class, I asked him what colour he would call her, replied at once "silver dun.") He, however, advised me in his letter to obtain the description of a well-known fancier and dealer in London, which I have done. He, describing her, like myself, from recollection, states her to be "a pale silvery dun, chequered on the

wings with very pale blue;" and as this last description would afford some apology for her being in a Blue class, it is, in my opinion, probably correct.

It is singular that none of us quite agree; but in all three descriptions the very pale ground-colour, combined with dun, are found. Returning to "TURKEY QUILL's" first letter, he remarks that blue-black means simply a bad black, buff-yellow a bad yellow, &c., &c. To this I cannot agree. A blue-black means that the black is "bad," certainly; but it means that the black is bad in the direction of being blue; and there is another equally "bad black," which would not be so described. So of the buff-yellow, &c.; they do not mean simply "bad" colours, but bad in certain definite directions. In exactly the same sense I certainly meant that the Carrier hen was "a bad-coloured dun," but bad in the direction of being silver. The only alternatives I can conceive would be a dun silver (which would be a barbarism) or a dun chequer; and the dun was not dark enough nor the chequer clear enough for the latter term.

I may, however, add that my very obvious intention was not to give such a precise description of the bird as might convey to distant fanciers the colour of every feather, but to express the impropriety of her being in a Blue class. For this purpose I used the nearest short expression which came to hand. I shall be glad to know what "TURKEY QUILL" would have called her; but beyond that, the question as to this particular bird is not worth discussion. If it should, however, be the means of opening-up the general nomenclature of colours, such a discussion may prove both useful and interesting; but I would suggest to "TURKEY QUILL" to simply mention any point that occurs to him frankly and directly on general grounds. It will equally answer his purpose, and save both time and space.—YOUR REPORTER AT GLASGOW.

I HAVE noticed "TURKEY QUILL's" notes on the above subject. The Carrier in pen 77 at the late Glasgow Show was what I would call a Dun-chequer, the ground colour of the feathers being of a light dun, and tipped with a darker shade, presenting a dappled appearance like a Blue-chequer. The term silver dun as applied to Antwerps of a mealy colour is, as he says, incorrect; but Antwerps are to be had of a colour which the term silver dun is, I think, a correct name for—viz., a silvery ground with dun bars and neck. The real silver colour as seen in Baldpates, Dragons, and occasionally though rarely in Pouters, is a very light blue with black bars. Silver Dragons with dun bars are Silver Duns, and black-barred birds are Silvers. There are five colours of barred Pigeons: blue with black bars, silver with black bars, silver-dun with dun bars, mealy with red bars, and yellow-mealy with yellow bars. When I came across pen 77 at Glasgow Show, and referred to the catalogue, I was of opinion that the bird being a Dun-chequer had no place in the Show at all, and was not entitled to the prize. The three classes for young Carriers were:—No. 11, Blacks; 12, Duns; and 13, Blues. In the old classes, however, the Blues included any other colour, and it was an evident omission not to have the same clause in the young class.

I think the following list includes all the self-colours found in English Pigeons:—Black, red, yellow, dun, blue, silver-dun, mealy-yellow, mealy-blue, chequer, red-chequer, yellow-chequer, dun-chequer. Besides these there is a colour often seen in India, particularly in Fantails, Sharajees, and Mookies, which I would call simply blue, being of the colour of the body of a Blue Pouter, but without black bars or dark neck and tail. White might be called a self-colour also, except that, properly speaking, it is not a colour, being the result of want of colouring matter in the feathers. Pure white Pigeons (albinos) are to be got in almost every large field dovecot, and the ingenuity of man in matching whites with coloured birds has resulted in mottles, baldpates, splashes, and every degree of marking. I would not call an Archangel a self-coloured Pigeon, though without white, because it is of two very distinct colours—black and copper-coloured.—J. C. LYELL.

## BELFAST CANARY SHOW.

(Concluded from page 113.)

BELFAST SHOW was a first attempt; and the launching of such an expensive affair is a matter which keeps its promoters on thorns till the opening of its doors decide whether the public or the Society are to pay for the spectacle. It requires a knowledge of the tastes and inclinations of townspeople before entering on the speculative business of exhibitioning, and the process of educating people in a certain direction may turn out rather expensive. The schedule was good and the scale of prizes liberal, and I am sure it only requires that exhibitors be made aware of the facilities for carriage to ensure for the Belfast Society a brilliant future. The success of this, the first Show, must have been very gratifying, but I am much mistaken if the Committee will rest satisfied with less than twice the number of entries next year. With such stuff at the back, a show is capable of being increased to any extent and then the question

will be, as was gravely mooted, "Where shall we put them?" "Build a place," replied Mr. Montgomery.

I am not in the poultry "line," though I have a lot in my yard which I will show against all comers as eaters. I refrain from publishing my balance-sheet lest it should deter others from commencing such a healthy pursuit. "WILTSHIRE RECTOR" once tried to get me into Pigeons; and if any birds could have appealed to refined tastes, this pair of snowy Fantails he sent me ought to have done so. And once Mr. Fulton took me round the Newcastle Show, and talked to me like a father. I suppose my tastes lie in another direction. But "what great events from trifling causes spring!" My falling in love with the Canary arose simply from the fact of a drunken sailor sitting on a cage on my door-step. To save the birds I took possession of the cage. The man never called for them, nor could I ever find the owner. And when I moved into the house where I at present reside, I found in the yard a small poultry-house. It looked to me like a Bantam arrangement, and I have since discovered that birds of no less note than Mr. George Hall's Bantams have lived in it—and possibly may again. That little poultry-house set me going, and how soon a taste grows! It was with a new pleasure I went the round of every pen in the Show with Mr. Leno. The use of the Judges' book left the counterfoils in our hands, and his notes and remarks upon nearly every pen were extremely interesting, indicating the accomplished judge, and showing with what care he had weighed over the merits and demerits of every bird. The poultry world has received a valuable acquisition in the elevation of Mr. Leno to the "bench," and no inquirer (or grumbler either) could look in his face and say, Why? without feeling certain of getting a most courteous explanation or satisfactory reply, at the bottom of which plainly lies undeviating honesty of purpose. In the Selling class several pens were pointed out to me as representing full value for money; and notably in the single cocks one of Mr. John Stuart's Dark Brahmas, No. 158; and among the "best pair of hena or pullets" Mr. R. P. Williams' Dorkings, No. 200; and Mrs. Taaffe's Cochins, No. 228.

The Ulster coat was happy among the Pigeons, and duly performed his devotions before Mr. James Montgomery's wonderful Dun Carrier cock. I didn't watch him; but I understand that when he put the cup-card on the pen he respectfully raised his hat to the noble bird.

The great features in the Canary classes were the "Scotch Fancies"—indeed, no other variety except the Belgian seems to have been cultivated in Belfast. The Belgians themselves were only an indifferent sample, though there were one or two which showed they had it in them. The Fancies were a fine lot of birds, but in many cases very coarse in feather. The silver cup for the best specimen was won by Mr. Samuel Croll with a Yellow hen—a gem, her mother standing second. I was glad to find both belonged to the same owner, as they were so much superior to the rest, and so much alike that it was no easy matter to separate them. I think I have seen longer birds, but for symmetry and quality of feather they were unique. The winning birds were all meritorious specimens, and but very few in either of the four classes were thought undeserving of commendation. Mr. Baxter's small collection from Newcastle, embracing Clear, Variegated and Crested Norwich, Lizards, Coppy, Cinnamon, Variegated ditto, and Mules, including a very pretty Cinnamon Mule, bred from Cinnamon cock and Goldfinch hen, attracted considerable attention, and next year these varieties will find a place in the schedule. Our British birds were poorly represented. The Skylark, Song Thrush, Blackbird, Bullfinch, Starling, and other familiar faces were absent. But Belfast did its best; and if fanciers will do their best to help Belfast, then Belfast will do its utmost to help them.

Judging over, we endeavoured to solve the problem as to how many persons an Irish "kyar" will carry, and how many miles an hour a grey horse can "reel off." Both seemed to me to be unknown quantities. Our destination was Springfield, where Mr. Mulligan has a pretty little place, and thence to Whiterock, the residence of Mr. Firth, the working Secretary, pleasantly situated at the base of one of the mountains which bound Belfast on the north-west. I should think the "jarvie" never drove such a load before. About half-way to Springfield he pointed over his left shoulder with his whip to a large red-brick building. "D'ye see that?" "What?" "That." "Which?" "That." "Well!" "Shure an' it's the Lunatic Asylum!" We dropped Mr. Jones at Springfield, and picked him up on our return. He was doing the *otium cum dignitate* in an easy-chair with an Havannah. A glass of champagne and a look at Mr. Mulligan's poultry cups, and the "jarvie" whisked us back to Belfast to the serious business of the day—the dinner at the "Imperial." After-dinner speeches are proverbial; but Mr. Montgomery's loyal speech on giving "the Queen," his remarks on Home Rule, and his hints and advice to young fanciers, the fruits of years of experience, will not be forgotten by those who listened to them.

An early ride and a bracing air enabled us to do justice to Mr. Firth's good things at breakfast at Whiterock next morning, and as the steamer did not sail till five, there was not that cause

for apprehension as in the case of the hot fish. Everything must come to an end, however, and five o'clock that evening saw us steaming out of Lough Larne on our homeward journey. Three hours' passage, and not in any light this time. But it was a lovely evening, and one could hardly imagine it was January. The lights at Larne and away to the north on "The Maidens" grew gradually less till they disappeared altogether, while the revolving light on Corsewall Point flashed its alternate red and white glare with greater brilliancy as we neared Loch Ryan. Cairnyran was sleeping quietly under the hills, the light from its friendly beacon streaming into the Loch as we steamed up its quiet waters, not sorry to be nearing home, with pleasing recollections of kind friends on the other side.—W. A. BLAKSTON.

### THE BEE-KEEPER'S CALENDAR FOR FEBRUARY.

This month, like last, is one of inactivity amongst bees. As the days lengthen the hopes and enthusiasm of bee-keepers are awakened, and some preparations are made for coming events. After so many unfavourable seasons in almost unbroken succession, let us anticipate that 1874 will be a favourable one for the apirians of Great Britain. For two or three years I have been anxious to realise £100 profit in one season from bee-keeping, partly from selfishness, partly because my father once saved that amount in one year from his bees, and chiefly from my desire to have an encouraging example of bee-keeping to place before the working rural population of England.

If the weather continue mild, queen bees will begin to lay early in this month. In this neighbourhood I once saw young bees on the wing on the 15th of February. The queens that year commenced to lay in January. About three years ago we had a very cold late spring, when queens did not lay till about the end of March—at any rate, the first hatch of brood did not appear till the middle of April. An open early spring and a warm early locality are very advantageous to bees, for their lives are of short duration—nine months at most, but very, very few of them live so long. If a hatch of brood be not obtained in March to fill up the ranks thinned by death, many hives become so weak in bees that these have a hard struggle to live, and the population of some is altogether destroyed. In a cold spring and cold late locality I think it is desirable to stimulate bees by artificial feeding, and thus cause them to breed earlier than they would otherwise do.

It should be borne in mind that spring feeding is simply to stimulate and keep alive, and the food not to be stored-up as in autumn. During February half a pound of sugar with half a pound of water weekly will be enough for a hive of moderate strength. And this half-pound should be given in three doses—say one every Monday, Wednesday, and Friday. Every bee-master has his own mode of administering food to his bees. For spring feeding we use troughs about 1 foot in length, 2 inches broad, and less than half an inch deep. These are filled or half filled and pushed into the hives by the doors, thus twenty hives may be fed in less than ten minutes' time. If bees have been prevented from leaving their hives by frosty weather for weeks, an accumulation of dirt will be found on their boards, and it should be scraped off this month.

Cottagers who make their own hives should get them ready during the long evenings of winter; and amateurs, too, should prepare beforehand for an increase of swarms. We have already ordered fifty large hives for our swarms. These, with twenty old ones now empty, will probably be required for swarms in May and June. I calculate on having at the rate of three swarms from two stocks—that is to say, one swarm from each hive, and a second swarm from every second hive of bees. The readers of this Journal know that Pettigrew has for years been ringing the bell and telling the bee-keepers of Great Britain and Ireland to adopt hives larger than those in general use if they wish to realise great profits or large results from bee-keeping. It is evident that a large number of workmen will compass and do more work of every kind than a smaller number, and it is equally clear that the births in a large town will far outnumber the births in a country village.

In preparing hives for the reception of swarms, guide-combs and cross sticks only are necessary. The guide-combs should be sealed to labels of wood, and then pinned on the crowns of hives (of course on the inside), by nails. The combs should be made to run from front to back, and the cross sticks from side to side. Thus the combs cross the sticks and are fastened securely to them. These cross sticks are of much service to bee-keepers who carry their bees from place to place; and they are of use to the bees, for these go from comb to comb across the hives by their means. Where the combs are fastened to the sticks, the bees leave small holes as doors or passages for their own convenience. We put four or five cross-sticks nearly as strong as a walking-stick in every hive. When the combs are cemented to these, the hive will bear a great amount of ill-usage before the combs are injured. We have sent hives to almost every corner of England without injury. If the reader has no guide-comb preserved from last autumn, he should cut out of one of his hives

of bees all he will require for his swarms this year. Old tough comb is better than new brittle comb for this purpose, but it should be cut out before brood be put into it. A bit of comb about 2 inches square is enough for each hive. It is requested that the reader will bear these simple things in mind, for it is not my intention to repeat them at the busy swarming season.

Sometimes a bee-master may wish to remove his bees from one part of his garden to another. The present month is, perhaps, the best time to remove hives a short distance, for bees come out but seldom now; and when they come out it is for a winter dance and purposes of cleanliness, and when on these errands they look well about them, and never go far from home. In times of honey-gathering they leave their hives to go straight to the fields or orchards, and may not discover that the position of their homes has been altered till they return to the old stands. In summer, hives should be removed from one part of a garden to another by short stages—say 1 or 2 yards every day. At present they may, I think, be removed from one side of a garden to another with safety. When this is done, all the hives should go at once; for naturally some bees would return to the old place, and if they found a hive near it, they would seek a home there instead of returning to their new position.

February is a favourable time to purchase hives and commence bee-keeping. Bees can now be removed to great distances without risk of suffocation even in the hands of inexperienced persons. I am frequently consulted as to where bees can be bought, also when bee-keeping should be commenced, and generally recommend those seeking advice to commence with not less than two hives, and to buy, if they can, of the cottagers in their own neighbourhood. When I say neighbourhood I mean within a few miles, for there would be some risk if the bees bought had been standing within a mile of the buyer's garden. When hives of bees cannot be obtained near home, they may always be had of respectable extensive bee-keepers elsewhere. Here let me notice that there exists in the minds of many people, both rich and poor, a foolish prejudice and a ridiculous superstition respecting buying and selling bees. "It is very unlucky to either buy or sell a hive of bees. I bought a hive once, and it died." And the poor man says, "If I sell one of mine all the rest will die." Many old women in England believe that all the bees in their possession will die if they are not told of the death of one of the family of the owner. Such superstition is very remarkable and lamentable. I can believe that many gentlemen have made a commencement in bee-keeping and failed. Their hives may have been diseased and worthless when they obtained them. The season after they purchased them may have been unfavourable, and the bees may not have received proper attention. I venture to express an opinion that almost all the disasters attending hives purchased by beginners have been owing to their own ignorance. It is a most difficult undertaking to teach a novice in bee-keeping how to distinguish between a good and a bad hive, and how to value aright hives at all seasons.

Next month I shall begin to examine hives internally, and continue to examine them thus till the end of September.—A. PETTIGREW, *Sal.*

### HOW TO KEEP BEES AT A PROFIT.

SOME years ago I began to keep bees, from a desire more to learn their habits and amuse myself than for any return I might obtain for the trouble. I have certainly learnt a lesson, but have gained no money. I have now ceased to take much interest in my little pets. On reflection I begin to think my old grandmother right, who kept bees on a common-sense plan. Her rule was to destroy all old stocks, keeping over only the early swarms; so that by having none more than one year old with the "casts," as the later swarms were called, she had two classes of honey—one she sold at a good price, the other was made into a drink called mead. My grandmother seldom fed her bees, for she never attempted to keep a weak swarm over the winter. I begin to think the old woman, by instinct, did what was no doubt the best to get honey. She never had any old foul comb for bees to breed in, as in hives two or three years old, and in not feeding the bees with syrup the comb is not filled with such stuff in the breeding season.

There is another point I think of importance which I should be glad of some information upon. My opinion is that feeding bees, as a rule, is bad; except on absolute danger of their dying, I do not think they ought to be fed. It must be wrong to teach bees to rely on the bottle, as it might tend to make them idle. We have some proof of this; for it is well known that in the tropics where the bees can get honey all the year round they store but little, but in the cold regions of the north, with a very short season, they collect the most honey.

I took some pains to inquire into this subject when in Switzerland. I could not believe that so large a quantity of honey, which I saw in the market, could have been gathered in those narrow valleys so long locked-up in frost and snow; but one season when I happened to be there at the end of May, I could see

the reason then very well. Were it not that I fear you will not publish these remarks I might extend them.—J. C., Brentford.

### SUPERS FILLED ARTIFICIALLY.

I HAVE read with great pleasure the indignant protest by your able correspondent, "A RENFREWSHIRE BEE-KEEPER," against the nefarious practice which has within the last few years been adopted, of filling supers intended for sale or exhibition by the artificial means which have been described.

It is much to be regretted that any bee-keeper should have his moral powers so defective as to be unable to see that he lays himself open to a charge of fraud when he palms upon the public, as the product of a single season, an article which in reality combines the collections of two or more. Even supposing such a compound to be genuine honey, it can only be honey of inferior quality and flavour, much of the excellence of that which went to make it up having been lost through age and other influences. If in completing the contents of either large hives or supers sugar has been used, is not the party using it guilty of a crime which is now frequently punished—viz., the crime of adulteration?

I am glad Mr. Breen has made a clean breast of his doings by voluntarily disclosing his proceedings; but I hope we have heard the last of them, and that competing supers entered for prizes will have the affidavit attached to them, declaring that nothing went to their composition but what the bees collected directly from the fields during the period extending from April 1st till November 1st of the year for which a reward is offered.

It is an easy matter to make beautiful large artificial glass supers. There is no need to try. It was accomplished years ago with the greatest success; and I have now to learn that anything has yet been produced superior to the 87 lbs. glass which was so admirably photographed and described by "RENFREWSHIRE BEE-KEEPER" in your number of June 4th, 1863. I saw that glass at Moffat Show in September, 1867. I overheard some particulars in regard to its manufacture; but the information obtained was so repelling as to take away all beauties from the super in my eyes.—R. S.

### OUR LETTER BOX.

**YARD FOR DORKINGS (Tauri Caput).**—You have described the paradise of Dorkings. No other breed will suit you half so well, or pay you so much money. Laying is the result of proper management, and keeping early pullets of each year to be layers in the winter. Profitable eggs are those that are laid when other people have coos. Houdans are very good layers, but they do not sit. Where there is such a run as you describe, nothing is so profitable as the Dorking. They are good layers, good sitters and mothers. Climate does not interfere. We have seen as good Dorkings bred in Scotland as we ever saw in the south and south-west of England. We know no place where there is not a sale for good fowls, and the Dorking will make you better market fowls than any other. The Spanish do not sit, neither do the Crève-Cœur nor the Hamburgs. At this season of the year the proper plan is to buy a few of the breed you intend to keep, and eggs that you can put under your mongrels as they become broody.

**FERTILE EGGS (T. H. E.).**—Answer to question No. 1.—After two or three days. 2. You may set the eggs after three days certainly. We should have little faith in the cock you mention as a stock bird. In a horse such a disease would be called string-halt. We know no name for it in fowls. There is no reason why it should be hereditary, but as it is a serious thing to lose the early season, we never advise anyone knowingly to use a doubtful bird or one subject to any disease or infirmity.

**BRAHMA PULLETS (D. Judd).**—As a rule your pullets should be laying, and judging from your description we should say they are laying. You do not tell us the flooring of their roosting house. Whatever may be the difficulties of their out-door run, the flooring of their house may be of earth. They will scratch in this in the morning, and they will resort to it during the day. April pullets have laid before this. Are you sure they do not eat their eggs? It is a nasty trick, and they learn it one of the other. Can they always go out? If not, at what time are they let out? Many bad tricks are learned when they are shut-up together and have nothing to do. "Idleness is the mother of all vices." Change your food a little. Give the barley in the shape of meal instead of whole. Let them have it slaked with water morning and evening, at midday house and table scraps if there are any. If not, give them some whole Indian corn. Discontinue potatoes and Indian meal. Potatoes rather hinder than increase laying. They cause disease of the liver. Do not give them too many worms. In a state of nature they have them only as luxuries. So far as you can do it, let them be exactly as they would be in a state of nature. No disinfectant is needed if the dung is raked off daily, and the gravel forked occasionally.

**DARK BRAHMAS' FEATHERS (Gleum).**—We are not sure you are not mistaking windmills for giants. We do not understand "streaky" defects in Brahmans. They are not like Hamburgs, where a faint mottling disqualifies. The fault of the feathers you send is, they are tinged with yellow. That is a fault and a grave one. If you choose a cock positively without a buff or chestnut feather on the wing or back, you may breed from your pullets. If they are well marked and pencilled to the throat, you may put the virtue against the vice.

**CROSSING BLACK AND YELLOW JACOBS (A. B.).**—We have frequently experimented in crossing Black and Yellow Pigeons, and always with a bad result. The young have come strawberry-coloured or smoky.

**POINTS IN CARRIERS (Inquirer).**—The following are the chief—Wattle.—Broad across the base of the beak, tilting and tapering from the head towards the point of the bill. It should not press on the cere of the eye, as with age it brings coarseness. The wattle and cere should be of distinct formation. The Eye.—Iris bright orange red; cere, or eye wattle, a complete circle round

the eye, broad, and equal in width. Head.—Long, narrow, flat at the top; the narrower the space occupied by feathers along the top of the head between the eyes the better. In a very superior specimen it will be less than half an inch wide. Beak.—Long, straight, thick, fitting closely throughout its length when closed; it is then called "a box bill." If the upper mandible arches, the tailing becomes even more and more developed as age increases; so much so, that not unfrequently the upper bill curves over, and the Pigeon becomes what is generally known as "Parrot-beaked." This defect is by some fanciers thought to be brought on by the birds being fed in troughs, by which no free action of the bill in picking up its food is called forth. Mr. Ord, however, doubts this, and believes it to be hereditary. Form.—Neck long, thin, and very slightly curved. Shoulders wide. Wings strong, and pinious long. Back rather hollow. Legs large and stout. Attitude erect and graceful. Colour.—If black, the feathers should be jet colour, as a slaty tinge is a great fault; and in Duns, a clear colour is most important, as the feathers should not be at all flecked with lighter colours at the edges, or chequered in the least. Mr. Ord believes that the freckling in Duns is caused by exposure to the sun and weather. His prize birds are kept constantly in the locker, and have not a pale feather; but others, which are allowed to fly about out of doors, are chequered with paler feathers. Your room will do well for Carriers. In such rooms they are constantly bred.

**FEEDING BEES (J. N. T.).**—Owing to the mildness of the weather during the winter months bees have consumed a great deal of their stores. You will, do well to commence feeding at once, and continue to do so till fruit blossoms appear. Bees will now begin to breed, and require more food.

**NEIGHBOUR'S HIVE (T. L.).**—Messrs. Neighbour & Sons, 127, High Holborn, London, W.C.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barom. at Sea and Level.	Hygrom- eter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		R adiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.										
Jan. and Feb.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
We. 23	30.548	45.3	44.7	N.W.	41.6	47.2	37.4	50.9	34.1	0.01
Th. 24	30.598	48.4	41.4	W.	42.6	45.5	41.8	46.2	41.5	—
Fri. 25	30.460	43.8	39.0	N.E.	42.4	47.1	39.1	55.6	39.3	—
Sat. 26	30.511	34.0	33.7	W.	40.8	50.0	30.5	50.8	27.3	—
Sun. 1	30.450	44.4	42.2	N.	41.5	47.1	33.1	5.5	31.9	—
Mo. 2	30.430	42.6	39.5	N.W.	41.9	43.5	40.4	45.3	39.4	—
Tu. 3	30.398	39.9	39.4	N.W.	41.6	43.2	35.8	43.0	31.9	—
Means	30.458	41.8	40.0		41.8	46.7	36.9	58.2	34.6	0.010

### REMARKS.

28th.—A dull, damp, grey day, with a little rain.

29th.—Not by any means a bright day, but placid and free from either wind or rain.

30th.—Bright and beautiful throughout the whole day.

31st.—White frost in early morning; warm and bright in the middle of the day, but rather cloudy afterwards.

Feb. 1st.—Rather a pleasant day, though somewhat dull, neither sunshine nor shower all day.

2nd.—Very dull day, at times very dark, though not at all foggy.

3rd.—Dark morning; drops of rain commenced about noon and continued (at times) all the remainder of the day, but only slightly, so that it did not altogether reach a measurable quantity; fine in the evening and night.

Temperature nearly the same as last week, except that there was a greater difference between the dry and wet bulb from the air being drier. One or two of the days were quite spring-like.—G. J. SYMONS.

### COVENT GARDEN MARKET.—FEBRUARY 4.

A FEW straggling orders are on the market, but not anything like what there usually is at this season of the year, owing, no doubt, to the influence of the elections. A fair supply is current, both of home-grown and foreign produce, without alteration in prices.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	1 s 11	0 10	Oranges.....	100	4 0 10
Chestnuts.....	bushel	10 20	Pears, kitchen.....	doz.	1 0 2 0
Filberts.....	lb.	1 0 1 6	dessert.....	doz.	2 0 5 0
Cobs.....	lb.	1 0 1 6	Pine Apples.....	lb.	2 0 6 0
Grapes, hothouse.....	lb.	2 0 7 0	Quinces.....	doz.	0 0 0 0
Lemons.....	100	4 12 0	Walnuts.....	bushel	10 0 16 0
Melons.....	each	1 0 3 0	ditto.....	100	2 0 2 6

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	3 0 10 6	Mushrooms.....	pottle	1 0 10 2 0
Asparagus.....	100	4 0 8 0	Mustard & Cress.....	punnet	0 2 0 6 0
French.....	15	0 0 0 0	Onions.....	bushel	3 6 3 0
Beans, Kidney.....	100	2 0 0 0	Pickling.....	quart	0 6 0 0
Beet, red.....	doz.	0 0 0 0	Parsley per doz. bunches	4	0 6 0 0
Broccoli.....	bundle	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz.	1 0 1 6	Peas.....	quart	0 0 0 6 0
Capiscums.....	100	1 6 0 0	Potatoes.....	bushel	3 6 4 0
Carrots.....	bunch	6 0 0 0	Kidney.....	do.	0 0 0 0
Cauliflower.....	doz.	3 0 6 0	Round.....	do.	0 0 0 6 0
Celery.....	bundle	1 6 2 0	Radishes.....	doz. bunches	1 0 1 0
Coleworts.....	doz. bunches	2 6 4 0	Rhubarb.....	bundle	0 9 1 6
Cucumbers.....	each	1 0 2 0	Salsify.....	bundle	1 6 0 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	1 0 2 0
Endive.....	doz.	2 0 0 0	Scorzenera.....	bundle	1 0 0 0
Fennel.....	bunch	0 8 0 0	Sea-kale.....	basket	1 0 2 6
Garlic.....	lb.	0 6 0 0	Sballots.....	lb.	0 3 0 0
Herbs.....	bunch	0 2 0 0	Spinach.....	bushel	2 0 6 0
Horseradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	2 0 4 0
Leeks.....	bunch	0 8 0 0	Turnips.....	bunch	0 3 0 4 0
Lettuce.....	doz.	1 0 4 0	Vegetable Marrows.....		0 0 0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week	FEBRUARY 12-18, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
12	TH	Meeting of Royal Society, 8.30 P.M.	44.9	29.6	37.2	16	22 47	7 45	39 4	30 11	25	14 23	43
13	F	Twilight ends, 7.3 P.M.	44.3	29.6	36.9	14	20 7	9 5	45 5	after.	26	14 27	44
14	S	Valentine's Day.	45.6	30.9	39.3	15	18 7	11 5	37 6	41 1	27	14 25	45
15	SN	QUINQUAGESIMA SUNDAY.	47.0	31.3	39.2	17	16 7	13 5	14 7	8 8	23	14 22	46
16	M	Meeting of Entomological Society, 7 P.M.	47.0	30.6	38.8	11	14 7	14 5	42 7	40 4	24	14 19	47
17	Tu	Meeting of Zoological Society, 8.30 P.M.	46.6	30.6	38.6	17	12 7	16 5	2 8	14 6	1	14 15	48
18	W	Ash Wednesday, Royal Horticultural Society, (Fruit, Floral, and General Meeting.)	45.2	31.1	38.2	17	10 7	18 5	19 8	45 6	2	14 10	49

From observations taken near London during forty-three years, the average day temperature of the week is 45.8°; and its night temperature 30.5°. The greatest heat was 67°, on the 16th, 1867; and the lowest cold zero on the 13th, 1855. The greatest fall of rain was 0.50 inch.

## LEAF MOULD, COMPOSTS, AND WATER.

**S**OME time ago the utility of leaf mould as an agent in plant-culture was called in question in a manner that at one time would have sounded very much like heresy; for of the mixtures recommended by writers on plant-culture ten years ago or more, there is scarcely one in which leaf mould is not a constituent part. Writers of even a later date are equally favourable to its use; while quite recently, in an article by that eminent horticulturist, Mr. Pearson, it is mentioned that in Belgium Camellias are grown entirely in leaf mould, a fact which is confirmed by Mr. Wright. There are others, however, whose opinion on leaf mould is as widely at variance from the practice of our continental brethren as it is possible to be—in fact, it will be remembered that in the short discussion which followed the introduction of this subject, one or two writers made a fierce attack on leaf mould, not only doubting its utility, but considering it actually pernicious, and I have on more than one occasion heard it described as little better than poison to some crops. These are hard words, harder than ought to be used; and the writer who stigmatised it as poison was, perhaps, overburdened with leaf mould, had to substitute it for dung to most, if not all, of his kitchen-garden crops, and his soil being light, the result was not satisfactory. Let us, by way of contrast, turn to the case of the nurseryman or suburban gardener with a great extent of glass structures all filled with potted plants, and we shall find that he envies the country gardener the heaps of leaf mould which a well-wooded domain furnishes.

Instead, then, of dismissing leaf mould summarily, let us take a calm and fair survey of its merits or otherwise as an agent in supporting vegetable life, and in doing this it is only necessary to look to Nature for examples, and we shall see that in a great degree like produces like, or, in other words, the decayed foliage of a tree supports the growth of that tree, falling and decaying, as it does, underneath it. In a similar way other vegetation does the same when there are no disturbing causes, which certainly often come into action in the case of herbaceous and low-growing plants. It is not difficult to meet with fine old trees occupying sites innocent of cultivation, where the tree has been supported by those natural means of which the decay of some of its parts form an important item. Here, then, we have leaf mould in its truest sense acting a useful and important part. Or suppose we take a glance at what emigrants are doing in the back woods of America; we shall there see that a primitive mode of cultivation results in very good crops. Trees of all heights and sizes are cut-off at about 2 feet from the ground, and the tops having been burnt, a little scratching of the decayed leafy matter covering the ground forms a sufficient bed for the seed, and a good crop follows. In this case again we have leaf mould in its pure and unadulterated form serving all the purposes of

a staple soil and manure, for a crop, too, from which the material had not been produced. I will take another example nearer home—our woods of many years' growth, and we shall find that the annual growth there met with is in a great measure supported by the decaying vegetation of former years by which the ground is covered. I will now direct attention to the way in which leaf mould assists vegetation, more especially that of the choicer fruit trees and ornamental plants.

To those who recommend the preparation of vegetable compounds, with instructions so minute, and the fractional parts as carefully laid down as if they were of the choicer metals, I have but little to say. Neither do I find fault with those who insist on the leaf mould being the produce of one particular class of trees, for such niceties are rarely practicable; but I may, nevertheless, say that where it is possible to make a distinction in the leaves when collected in the autumn, their utility for heating purposes is of more importance generally than the material they produce when decayed; so that for the former purpose the leaves of the Beech, Oak, Sweet Chestnut, Tulip Tree, &c., which do not decay fast, are unquestionably the best; while those of the Lime, Poplar, Elm, Sycamore, and Horse Chestnut, more quickly decay, and consequently are not so well fitted to maintain a steady heat. I am not sure that as regards their value on the potting-bench they stand in the same order, and indeed it would be difficult to determine the matter from our imperfect data. Oak leaves are held in high estimation as compared to those of other trees, but for heating purposes I give the preference to the Beech. We have as many opportunities of collecting leaves as occur at most places, for every autumn there is an extent of twenty acres to rake over, and the ground is moderately thickly planted with deciduous trees of large size, while there is at least an equal area more thinly wooded, so that the accumulation of leaves by the middle of December is a formidable affair. We have no lack of leaf mould at any time, but beyond saving the Beech, Oak, and Chestnut leaves for the sake of the heat which they afford, I have not paid much attention to the comparative values of the decayed matter which is left after their fermentation. In general soft leaves decompose the most rapidly, and if we reckon their value on the same principle that is adopted with turf we would not place them so high in the scale as the more durable leaves; but it is so difficult to arrive at a just conclusion in this that I am unwilling to give an opinion. I may, however, remark that a long exposure to atmospheric air would seem necessary after decomposition had done its work; for I am far from certain that the confinement to which leaves are often subjected is beneficial in a cultural sense, but exposure to the air will sweeten almost anything, even some of our mineral poisons. I do not affirm that decayed vegetable matter, unless in a very unusual form, is at any time deleterious to vegetation, as has been sometimes asserted; and to those who doubt the fertile qualities of leaf mould, just let them examine a heap that may have been lying some time near the roots of a vigorous-growing timber

tree, and the mass of roots found permeating it in all directions will prove there is something in it which the tree likes.

Passing now from the consideration of leaf mould as a natural manure I will turn to it in another aspect—as an ingredient in composts. Although I have been for many years opposed to the use of most of the mixtures that have been recommended for special purposes, preferring on almost every occasion to confine myself to some simple material, with, perhaps, the addition of sand, I am aware that most plant-growers have their favourite compost, and in many cases leaf mould forms an important constituent. Mr. Wright has called attention to the excellent growth of Camellias in Belgium where the soil employed is considered to be leaf mould alone, and the question naturally arises, Cannot the same result be attained in this country? It has for many years been known, or at least supposed, that the dark-coloured material in which are grown the healthy little Camellias sent over from Belgium is more of a leaf mould than a peat. Nothing can look better than they do in Belgium, but as Mr. Wright has justly put it, how few of them present the same appearance after twelve months in England! and occasionally a hint is thrown out that the growth is by no means prolonged in such a way as to exhaust the soil in which they are grown, and that they begin to go back immediately they are put into other hands. Certainly they very often do go back, but whether to blame our continental friends or ourselves is one of the matters we have now to consider.

For my own part I may say that I neither give the soil they are grown in abroad the whole of the credit of their looking so well, nor do I altogether blame the altered material in which we are obliged to pot the plants when we receive them as being the cause of their doing so badly; the change may be only partly due to this cause, the other and by far the more important one I have no hesitation in saying is water. I only wish some of your scientific readers would investigate its effects; it would be of far more service than minute details as to the mixing of soils and the like, for to plants in pots water is of much greater consequence than soil. A friend of mine having access to the best peat that it was possible to procure was unable to grow Heaths well, and ultimately gave up the attempt, as he had no means of supplying them with water except that which was drawn from a deep chalk well, which was slow poison to the Heaths. There are plenty of country places where the water is of this kind, and there is no alternative but to use it. In most cases suburban residents are supplied from waterworks with water better suited to vegetation; indeed, I know that the water furnished to more than one large town is better for plants than that from wells in the neighbourhood. Now, in the culture of a plant requiring so much water as the Camellia, it is of the utmost importance that it should be of the description best suited to it, and such, probably, is that furnished to the great Belgian establishments, hence the success. Though the same conditions do not exactly apply to vegetable as to animal life, still there is a certain analogy between the two, and just as bad water may be destructive to the latter, so it may be in a greater or less degree to the former; and till we can by some simple process purify water containing matters injurious to plants we must submit to seeing them languish under the poison.

While referring to leaf soil for the Camellia, I may remark that some years ago I had a few plants from Belgium which, like all others I have seen from there, appeared to be grown in that material, and desirous of trying the effects of our own leaf mould, I took the most decayed portion from the outside of a heap of considerable age and size. Thinking it might not be firm enough in texture, I mixed with it a little mud that had been taken from a pond receiving a large amount of house sewage, and a quantity of leaves also. This was a rich manure in its way, as its effects on grass land and other crops indicated, and I concluded it would not injure the leaf mould by anything it might contain. A little drift sand was also added, the whole being fine, and in a fitting condition. The result, however, was not satisfactory; whether owing to the character of the mixture or from the quality of the water I am unable to say, but I should be strongly inclined to blame the latter, as some plants subsequently turned out of doors in the same material, and which had no water except from the heavens, succeeded pretty well. I should say that a good, firm, sandy loam, such as is often met with overlying the red sandstone, will do better for Camellias than any mixture I know, and for mixtures I am no advocate, especially that of peat and loam, so often recommended.

But to return to leaf mould. I cannot perceive how it is likely to be hurtful to anything; true, its want of solidity would seem to unfit it when used alone for pot-culture, as it cannot be expected to furnish so lasting a source of food, unless, as I imagine is the case with our Belgian friends, its defects are compensated for by the water. As an addition to stiff soils its uses seem to be too well recognised to allow of anything serious being said against it. At the same time when it has been so much extolled for the effects it produces, it would be well to ask what share water had in the result. When our knowledge shall have been more extended in this direction, we shall probably find out that many plants for which particular soils or mixtures were necessary can be better managed by supplying them with the kind of water they require.—J. ROSSON.

## THE ROYAL HORTICULTURAL SOCIETY'S ANNUAL GENERAL MEETING.

FEBRUARY 10TH.

This was held on Tuesday in the Council-room, South Kensington, Viscount Bury (the President), in the chair. Amongst those present were Lord A. Churchill, Sir Alfred Slade, Bart., (Council), Sir Coutts Lindsay (Council). Mr. Hardcastle, Mr. Godson, Rev. C. P. Peach, Mr. Dobree (Council), Mr. Liggins, Mr. Cole, C.B., Major-General Scott, Mr. Quilter, Mr. Godson, Mr. Bowring, Mr. Bateman, Mr. Shirley Hibberd, Mr. Haughton, Mr. W. A. Lindsay (Hon. Sec.), &c.

The SECRETARY read the advertisement calling the meeting, and then the minutes of the last General Meeting, which were confirmed.

The CHAIRMAN said the first business—the first formal business—they had to transact was to appoint scrutineers for the purpose of deciding upon the result of the ballot for the extraordinary vacancies in the Council. The ballot list, he supposed, was in the hands of the members, and he need not read the names. He wished, however, to say that there were no ordinary vacancies in the Council. The Council supposed that as three members of the late Council declined to accede to the wishes of the Society expressed on the 4th of April that they would retain their offices, it was not necessary to do anything more than to fill up the vacancies so created. However, the matter was investigated. It was referred to the legal adviser of the Council, and they had been advised that three members of the Council ought to resign, or ought to have resigned. Their legal adviser said it was too late to do it now. However, he would read the opinion for the meeting. The Council wished to act in accordance with the wishes of the Fellows, and would be very happy to remedy the mistake, which, however, they were informed, was of no real importance. The question submitted to counsel was this—“What the Council can now do, and what they should do at the General Meeting on the 10th of February as regards the ballotting list, &c.?” Now, the opinion of counsel was as follows—

“I am of opinion that a vacancy by resignation is not equivalent to a vacancy by death or incapacity within the meaning of the 10th clause of the Charter or the 86th bye-law, and that a mistake has been made by the Council in stating that there are no ordinary vacancies and in making no provision for filling such vacancies. This mistake does not, however, in my opinion, affect the validity of what the Council has done and proposes to do. The ballot list for Council is valid and may be acted upon. The objection to it is that it does not go far enough, and nothing is done to rectify the mistake which has been made. The 8th clause of the Charter and the 115th bye-law prevent the mistake from causing serious consequences, and notwithstanding the mistake the acts of the new Council will be perfectly valid. Under these circumstances I advise the Council to proceed with their list, but to admit the mistake which has been made as to the ordinary vacancies, and to explain to the meeting that it was impossible to rectify the mistake in time, and to say that the Council is advised that the mistake is of no real consequence, and need not be rectified at all, but that if the Fellows wish it three members of the Council will retire and a special meeting will be called to elect successors to them. If they desire this to be done, the Council, having made a mistake, ought, I think, to comply with such desire.

“With respect to Mr. Haughton's second letter, it proceeds upon the erroneous assumption that the appointment of the present Council was invalid, and his proposals, as contained in that letter, should be opposed. As regards the debentures of the old Society, I am of opinion that they are as binding on the present Society as they were on the old Society.

(Signed)

“NATHANIEL LINDLEY,

“6, Stone Buildings, Lincoln's Inn.

Now, continued his lordship, that was the opinion of counsel, which he had read to the meeting.

Mr. HAUGHTON said his objection was founded upon the 110th bye-law, which required that if any Fellow desired to substitute the name of any other Fellow for that of any one recommended by the Council, such Fellow must, seven days after the circulation of the list, leave notice on the Society of the proposed substitution. Now, that was to say that the present meeting would be deprived of its undoubted right to put in three other members if the list was framed in the proper way. He could not nominate the gentlemen he wished to have elected. That being so, it appeared to him that although Mr. Lindley's opinion was quite correct, there was no inconvenience or danger to the

Society, yet that this meeting would be deprived of its right to elect members on the Council in a due and proper manner. Now, there was another question—

The CHAIRMAN.—I do not want to interrupt the gentleman who seems to have something to say [a laugh]; but the Council wish to state that if what is proposed is not agreeable to the meeting, and if what the honourable gentleman says is in accordance with the views of the meeting, we shall forward those views in every way [cheers]. Three of us ought to resign, but we were misinformed. Three of us will resign. The question is, Will gentlemen leave things as they are? It is a matter of perfect indifference to the Council [hear, hear].

A FELLOW.—Put it to the vote.

Mr. HAUGHTON was very much afraid they had no power to adopt the suggestion at that meeting. Mr. Lindley referred to the 115th bye-law, which applied to cases where there had been no election or an invalid election; but that bye-law did not enable them to elect the three they ought to elect that day, unless they gave notice in accordance with the 110th bye-law. He was afraid if the election were made by the Council it would be invalid. The proper course would be to adjourn this business to another day [hear, hear, and "no"].

The CHAIRMAN.—I put the question whether the Fellows desire this to be done. Mr. Lindley says it is not necessary, and the Council say it is a matter entirely unimportant to them. They wish to comply with the wishes of the Fellows [hear, hear]; for I put this to the meeting, that we are willing to admit we committed an inadvertent mistake, and in order to remedy it we will ballot out if the meeting wishes it [hear, hear]. However, Mr. Lindley thinks it is not important, and therefore the meeting will take their own course. Those in favour of balloting out, and thereby remedying the mistake, hold up their hands [one hand held up]. Those in favour of the matter remaining as it is hold up theirs [a large number of hands held up]. Carried [laughter]. The meeting has determined that the matter shall rest as it is [interruption, and cries of "no" and "yes"]. The next thing we have to do is to request Mr. Liggins and Mr. Pincher to act as scrutineers.

Mr. HAUGHTON.—I think this is the proper time for me—

The CHAIRMAN.—I think the meeting will consider it better that I, the President of the Society, should say a few words and conduct the business in the ordinary manner. In point of fact, I want to say a few words before the formal business of the meeting begins. We are in a critical position in this Society. You remember that a few years ago a proposition was made by which the gardens were to be disposed of in such a way as we thought would be very much for the benefit of the International Exhibition and very little for the interest of the Fellows of the Horticultural Society. Upon this a division of opinion arose, and the old Council resigned. The present Council—[A voice, "Members are not to ballot"—Uproar.] I appeal to you, ladies and gentlemen, to support me in the chair [cheers]. I was making a statement of the fact that differences of opinion have arisen, and that a majority of the Fellows placed the present Council in office, and their distinct duty and policy was so to arrange matters as to preserve the gardens of the Royal Horticultural Society for the use of the Fellows of the Society [cheers]. The new Council have, in the face of very great opposition and very great difficulty, carried out that policy to the best of their understanding and power. They felt that it was exceedingly necessary to enter into cordial arrangements with the Royal Commissioners, and with that view and with that reason, within a very few days a Committee of their body met a Committee of the Royal Commissioners, and agreed with them on certain terms by which mutual advantages would be obtained. From the very first it was asserted on the part of the Commissioners that your Council as at present constituted was not a legal body. We felt when we met the Commissioners that it would be utterly futile to enter into any arrangement with them, and then let it be in their mouths to say that we entered into it; but that as we were not a legal body, it went for nothing. In one part of the arrangement was inserted a clause by which the Commissioners were bound that they should not be the parties to raise the question. The Committee of the Royal Commissioners agreed to this, and upon that agreement we at once placed them in possession of all the advantages they derived under the agreement, and we ourselves entered into the possession of advantages which accrued to us. But when the matter was remitted from the Committee of the Commissioners to the Commissioners themselves, several points in that agreement were struck out, and one of them was the clause which stated the Commissioners would not question the legality of our appointment. I need hardly say that we should not have considered ourselves at liberty to place the Commissioners in possession of advantages under the agreement unless we believed the whole of the agreement was going to be acknowledged by the Commissioners [loud cheers]. We regret very much, although we cast no imputation upon them, to have to say that they have steadily and persistently, although placed last year in possession of all the advantages under the agreement, disregarded that por-

tion of the agreement I have referred to, and have declared that we are an illegal body and that they could not deal with us [oh! and "shame"]. But if this is so, why should they give us thousands under the agreement? They gave us certain advantages and we gave them certain advantages. The position is this, if we quarrel among ourselves the all-devouring element of South Kensington will swallow us up, and our gardens will be taken from us, and we shall be turned out. We want you, if you agree with us, to put such confidence in us as will be sure to make us successful to resist all attempts against the integrity of your gardens [loud cheers]. The bone of contention is the possession of these gardens [loud cheers and "no"]. I warn you in time that if you are not very much on the alert these gardens will pass out of your hands. Now, gentlemen, there are several matters which we are told are going to be brought before you to-day. I conjure you not to quarrel over these matters, but to defer them until a more fitting opportunity. Let us go on in the policy we have begun, and then, I think, we shall bring it to a successful issue. Now, gentlemen, there is one question of very great importance—the question of voting by proxy. I do not conceal from you that there is a difference of opinion on that point among the members of the Council. But a very strong expression of opinion was passed on that subject at a late meeting in favour of voting by proxy, and all I can say is that the Council, having taken this matter in hand, have no objection to draft a bye-law—such a bye-law as would tend to improve the relations between the Royal Commissioners and the Fellows of the Horticultural Society [loud cheers]. We hope that will satisfy you. The Council undertake, and you may consider this a pledge on their part, they will not canvass against the motion, or ask for proxies against it, or do anything to interfere with it, but each individual member will reserve to himself the right to discuss the matter when it comes before them. I hope that will be satisfactory [cheers]. I really do not know of anything we are to do but to renew our appeal to you that you should throw away all dissensions and work for the common good, and also—I will not say against the common enemy, for we wish to be friends [laughter]—but to avoid new danger. I can only say for myself and colleagues that the work at this table and up-stairs has been done most assiduously for the last year, that it is very hard labour, and that it is somewhat thankless [hear]. We cannot have any personal interests in the matter further than wishing to see these gardens as open spaces and unbuilt upon in the hands of the Horticultural Society [loud cheers]. All I can say is, if you disagree with our policy you displace us by others, and if any question brings that about I for one shall retire into private life with the most assured feeling I had tried to do my duty, but that I have been relieved from a very considerable and very arduous work [loud cheers].

Mr. HAUGHTON said he should like to refer to bye-law 90.

Mr. GODSON.—Move the report and second it [laughter].

Mr. HAUGHTON rose amid loud cries of "chair, chair," and "order." He could not obtain a hearing, and after some further interruption,

The CHAIRMAN said, We do not want to stifle discussion. Every one here will have an opportunity of speaking, but pray let us proceed in a proper and business-like way.

The Honorary Secretary, Mr. W. A. LINDSAY, was about to read the annual report when, by the unanimous consent of the meeting, it was taken as read.

The CHAIRMAN.—I now beg to move the adoption of this report.

Sir COUTTS LINDSAY seconded the proposition.

Mr. HAUGHTON said he had an amendment to move to the following effect:—"That this meeting and business proposed to be transacted theret be adjourned to Tuesday, 10th March next, at 3 p.m., to enable an opinion of the Court of Chancery to be obtained, if possible in a friendly way, as to the legal position of the Society, and that Lord Alfred Churchill, Sir Daniel Cooper, Bart., Messrs. T. Dyer Edwardses, H. J. Veitch, and G. F. Wilson, jointly and severally, be empowered to act on behalf of this meeting in applying to the Court of Chancery, and to co-operate with others." Mr. Haughton said he was perfectly aware of the unusual nature of the proposition he had made. He hoped they would listen to him patiently for a very short space of time while he expressed to them the reasons which, in his mind, rendered it absolutely necessary that some extraordinary steps should be taken to extricate the Society from the position in which it now stood. The noble lord in the chair had told them how this difference of opinion, which unhappily existed, arose last year in consequence of the action taken by some of the Fellows of this Society when the report was laid before them by the Council. Many of them were there to-day, and he felt that if they had not the circumstances fresh in their recollection they must have the strong and violent language used in that room, language which he was not going to follow [cheers]. He might say that he now very much rejoiced when the Council, with their Chairman, came before them and had laid aside that position of open hostility they displayed when they last met there [hear and cheers]. He was glad

to hear a hearty response to that sentiment [hear, hear]. When this difference of opinion arose on the subject matter of the agreement proposed for the advantage of the Society, it appeared the agreement could have been negated without any tumult. Instead of the agreement being negated in the interest of the Society, the Council was attacked, strong language was used, motives were imputed to them; they were charged with conspiring with other persons to ruin the Society, with being false to their trust as trustees, and with acting as gentlemen would not and should not act. That being so—yielding to what was being done, and feeling they could not sit with honour at the table as trustees to be abused, these gentlemen said, "If you like we will resign"—that is, "we will resign if we have the power" ["oh, oh"]. He would give authority for what he said. He had the highest authority for what he said. To come back to the point. They said, "If we have the power to resign we will be only too glad to do so, and to get out of the position in which we are placed," and they did so accordingly. At another meeting—not an annual meeting, or one having power to entertain the question—they brought forward a bye-law framed with the object, and enabling them to resign in a body. Now, if that bye-law were good, the gentlemen now sitting behind the table were legally elected, subject to another consideration, that before they could be elected into their present places there should be vacancies of the places they filled. In the acceptance of the resignation of the old Council the voting was taken openly, whereas the bye-law made it imperative it should be taken by ballot. That being so, it was a matter of doubt whether the meeting could legally accept these resignations. Again, if the bye-laws were beyond the power of the Society, or repugnant to the charter of the Society, then he asserted equally these gentlemen had no right to sit where they did. Another point—the Council had secured the opinion of a man of high eminence in his profession, but he had before him an opinion given by a gentleman who was at least of equal, if not superior, standing in his profession, he meant Sir G. Jessel, the present Master of the Rolls. It was quite true that in the circular sent out some time ago by Mr. W. A. Lindsay the opinion of Sir J. D. Coleridge and Mr. Lindley was given, in which they said "The opinion of the Solicitor-General, as set out in the case, appears to us to be a mistake, as—"

The CHAIRMAN.—Read it.

Mr. HAUGHTON (reading).—"We are of opinion the new bye-laws are valid and legal [cheers], and the new Council is duly and properly appointed [cheers]. The case really turns upon the effect of the 10th clause of the Charter, and we are of opinion that the new bye-laws are consistent with and not repugnant to that clause [renewed cheers], and the opinion of the Solicitor-General as set out in the case appears to us to be upon, as it were, a question of validity."

The CHAIRMAN.—The meeting will perceive that that opinion is signed by Sir John Duke Coleridge and Mr. Lindley [hear, hear].

Mr. HAUGHTON went on to say that the question submitted at the time to Sir G. Jessel, when he was Solicitor-General, was whether it was competent for the Council to resign in a body, and if the Fellows at a General Meeting could appoint a fresh Council, or whether the resignation of the Council in a body would leave the Society without a government. The reply was, "I think this can be only done at the February meeting." The second question was, "Can the appointment of an entirely new Council be legally effected by an alteration in the bye-laws?" The answer was, "I think it can by a bye-law authorising the Council to fill-up vacancies by resignation between the February meetings; the Council so appointed is re-eligible in the following February." That was to make a temporary appointment until the succeeding annual meeting had full power to deal with the question. The third question was, "Can the suggestion of partial retirement and gradual filling-up of vacancies be adopted if the Council thinks fit, under an amendment of bye-laws, without waiting for the annual meeting?" The reply was, "I think this can be done as above-mentioned." Now, the question was whether members elected on the Council at the General Meeting—another Council then constituted—was authorised to carry on the affairs of the Society. The answer was, "I am of opinion that they were not duly elected, even if such a bye-law as that was passed on the 26th March, 1873, was not repugnant to the Charter; yet it would not have been legal, not having been passed in the mode prescribed by bye-law 127, and therefore the election was not legal, and the old Council remained in office." [Cheers and counter cheers.] The second question was whether members of the Expenses Committee appointed on behalf of the Horticultural Society had been legally appointed on the Committee, and whether the Society should be bound by the resolution passed? The answer was, "I am of opinion the old members of the Expenses Committee remained in office. They do not appear to have resigned their office as committeemen." The third question submitted by the Commissioners was, Whether an agreement entered into between the Royal Commissioners and the Society, as before stated, might not, in case

the present Council and the Expenses Committee were not legally appointed, be hereafter repudiated by the Society?

Mr. LIGGINS rose to order. The Fellows had assembled for a particular purpose, and not to hear legal opinions, which were decidedly irrelevant ["no" and hear]—legal opinions got up by a clique [cries of "order"].

The CHAIRMAN.—The gentleman (Mr. Haughton) need not be alarmed—I think he is quite in order [hear, hear].

Mr. HAUGHTON said he should be sorry to take up the time of the meeting unnecessarily. He only did take it up because they were told Sir George Jessel's opinion sustained the legal existence of the Council. If he were to give a short *résumé* of the opinions, he might be charged with suppressing something [no, no]. Well, the answer to the last question was—"It does not follow it might in all cases so repudiate because it is not legally binding; but I am of opinion it would not be legally binding." Now, the opinion he had just read was a justification of the action of the Commissioners; for having taken that opinion, they conceived themselves bound by it, and so could not enter into business relations with the Society [cries of "oh"]. They could not recognise it; and until this question was settled, the action of the Society as far as regarded the out-door world as to the privileges of these gardens must be paralysed. No one would deal with them—no one would recognise them. He should conclude by saying it was not for that meeting to determine whether Sir John Duke Coleridge and Mr. Lindley on the one side, or Sir George Jessel on the other, he in the right. It ought to be sufficient for them to know there were such grave doubts that a distinct difference of opinion existed between such eminent authorities [hear, hear]. They ought not in that room presume for themselves who was right and who was wrong, or decide such a grave question of law which went to the very root of the Society. The Council, he thought, ought to unite with his friends and himself in endeavouring to place the legal position of their governing body beyond all dispute [hear, hear], and to determine what the status of that body was, so as to enable them legally to transact their duties [hear, hear]. He could not understand the opposition offered to this course. He thought they might all unite and act with temper and forbearance [cheers]. He now begged to move the amendment as follows:—"That this meeting, and the business proposed to be transacted thereat, be adjourned to Tuesday 10th of March next, at 3 p.m., to enable the opinion of the Court of Chancery to be obtained, if possible in a friendly way, as to the legal position of the Society; and that Lord Alfred S. Churchill, Sir Daniel Cooper, Bart., Messrs. T. Dyer Edwards, H. J. Veitch, and G. F. Wilson jointly and severally be empowered to act on behalf of this meeting in applying to the Court of Chancery, and to co-operate with others."

The Rev. C. P. PEACH rose to second the amendment. He said his object in being there was to represent to a certain extent the feelings of the country Fellows, who were being alienated from the Society because they did not know the position in which it stood. They thought that no bye-laws could be passed by the Society if it had not a legal Council, and therefore it was necessary to know what the position of the Society was, and whether they had a legally constituted Council or not. He did not say this with any idea of opposing the Council. He was anxious to strengthen their hands, and if the legal opinions were in their favour they would strengthen their hands. On the other hand, he could only say that it was necessary for the welfare of the Society that they should have a legally constituted Council, and therefore it was best to go to the highest authority and see whether the Council had the power to accept what the Commissioners did, and whether the Commissioners had the power to accept what the Council did. The Fellows in the country did not really know whether the Council had power to receive subscriptions.

The CHAIRMAN.—I want to say one word. I wish that the Society should be placed in possession of this fact, that this resolution is, I suppose, the resolution of the Royal Commissioners [cheers, cries of "no," and interruption].

Mr. HAUGHTON.—It is not [cheers].

The CHAIRMAN.—The two persons who circulated it came in with the pass of Mr. Richards, the Assistant-Secretary of the Commissioners. Mr. Richards is here, and you can ask him.

General SCOTT.—The Commissioners have nothing whatever to do with the resolution. No single member of the Commission has ever seen that resolution or heard of it [cheers, and oh, oh].

The CHAIRMAN.—Therefore you should keep Mr. Richards in order, and not allow him, with tickets which were disputed, to come in here and circulate papers against the Horticultural Society [cheers].

Lord A. CHURCHILL.—The resolution was adopted at a meeting of the Fellows yesterday.

The CHAIRMAN.—This circular asking for proxies is signed by James Richards, and he is an officer of the Royal Commissioners.

The Rev. C. P. PEACH.—I have no knowledge of Mr. Richards having anything to do with it at all. I was yesterday asked to second the resolution in the interests of the Society.

The CHAIRMAN.—We must, I suppose, accept the disclaimer of the Royal Commissioners. At the same time you know the affairs and finances of the Society are not in a very flourishing condition, and if you get into Chancery where are the funds to come from? That is all I say [applause].

Mr. DOBREE (Treasurer) said he went to the Albert Hall to see Mr. Richards, and having waited some time was asked his business. He said he had come to see Mr. Richards on horticultural matters, and that he was the Treasurer of the Society. The person he spoke to looked at him and said, "Do you want to know what they are doing? [laughter]. They have taken another opinion," he said, "and they are going to send out another opinion with the circular. They have taken another opinion from Sir G. Jessel, and Sir Daniel Cooper is going to send it out with a circular" [laughter]. Therefore he (Mr. Dobree) contended that the circular was sent out on the authority of the Royal Commissioners [hear and no].

Mr. SHIRLEY HIBBERD said the promoters of the amendment had not provided the Society with the means of going to law. It was absurd to talk about going to the Court of Chancery. Did the gentlemen know what a Chancery suit would cost? [hear, hear]. Did he wish to break his own or their hearts and spend every shilling they got, and in the end to be as wise as they then were? The Commissioners had transacted business with the Council and the Council with the Commissioners, and if the Commissioners could recognise the Council when it suited them they must also recognise the Council when it suited the latter [laughter and cheers]. Who were the men now opposing the Council? Those who invited them to come in ten months ago [no, no]. The men who had brought them into a thousand difficulties had been plotting against them. He thought they ought to support their Council, so that something like a sensible arrangement might be made with the Commissioners. That was the principal business before them [hear, hear].

Mr. LIGGINS observed that it was then past four o'clock, and they had no longer power to continue the ballot.

The CHAIRMAN announced that the list recommended by the Council had been unanimously adopted. It was as follows:—Extraordinary vacancies.—Vacating members, H.R.H. Prince Arthur, H.S.H. Duke of Teck, Lord Londesborough, and Mr. Andrew Murray. Fellows proposed by the Council to fill up the vacancies, Lieut.-Gen. Hon. Sir A. H. Gordon, K.C.B., Mr. Joseph Robert Tritton, Mr. Burnley Hume, and Mr. H. Webb. Officers:—President, Viscount Bury. Treasurer, Mr. Bonamy Dobree. Secretary, Mr. W. A. Lindsay. Expenses Committee-men, Sir Alfred Slade, Bart., Mr. W. A. Lindsay, Mr. H. Little. Auditors, Mr. James Nicholson, Mr. J. Gibson, and Mr. R. Hudson, F.R.S.

Mr. LIGGINS said therefore there was no doubt now the Council were legally elected [hear, and laughter]. They had now a legal right to sit and work with diligence and activity to carry out the best interests of the Society. Their very first effort should be to break down the clique headed by Major General Scott, Mr. Bateman, Mr. Cole, and Lord Alfred Churchill, who had circulated among the Fellows such papers as were seen in the room that day. If it went forth that the Society was going into Chancery, people would not join it [hear, hear]. They should support the present Council. Why, if these gentlemen thought they had the shadow of a chance of electing their own set did they not do so at that moment? He thought it was monstrous that Mr. Richards, an old servant of the Society, who was greatly respected, should betray them in such a way. Let them support the Council and the President, who did not neglect the business as the late President did.

Lord A. CHURCHILL remarked that the meeting had just elected four additional members of Council more than were provided for by the Charter. He maintained that there were no vacancies.

The CHAIRMAN said the Council were acting under legal advice.

Lord A. CHURCHILL.—Well, the amendment was for a friendly reference to the Court of Chancery to decide the dispute. There were strong legal opinions on both sides of the question. Sir George Jessel gave it as his opinion that the old Council still existed, and as one of the old Council he felt in an uncomfortable position, because, as certain gentlemen were spending the money of the Society, he did not know but some day or other the money would be run through, that the debenture interest would not be paid, and that then the debenture-holders would come upon the old Council for the money which had been spent [no, and laughter]. It was perfectly reasonable that the meeting should now agree to a friendly reference [no, no]. If it were decided that the present Council were the legal occupiers of the office he would give them all the support he could, but if not the old Council must return. It was a question of law, and if handled in a friendly way could be decided without any expense at all.

A Provincial FELLOW said there was a strong feeling in the country about the withdrawals of the Saturday tickets.

Sir A. SLADE said that as to the Fellows' orders on Saturdays and the 1s. charge, the present arrangement would last for

one year. Many persons would come to the gardens when the admission was 1s. Oftentimes five hundred orders came in, but not a shilling in money.

A Country FELLOW.—We look upon it as a breach of faith.

Mr. LINDSAY (Hon. Sec.)—It is the desire of the Council to make the gardens more popular with the public on holidays. Every Fellow received, or ought to have received, a table of his privileges previous to paying his subscription.

Mr. BOWRING, as a Royal Commissioner, wished to state that neither he nor any other member of the Commission had anything to say to the issue of the circular referred to. He held the office of Treasurer to the Commission, and it was his duty to receive £2400 from the Horticultural Society which had never reached him [a laugh]. He had only £1000 handed over to him, which showed an alarming deficit. He was a life member and debenture-holder of the Horticultural Society, and no person could take greater interest in the gardens than he did. He had served for many years as honorary secretary of the Expenses Committee, and this would show he had a strong personal interest in the welfare of the Society. He wished, however, to say he was the only survivor of three individuals whose duty it was to bring about the existing arrangement between the two bodies. These were the late Prince Consort, Mr. Coulson, and himself. The Commissioners spent no less than £55,000 in the arcades, and they added two sums of £13,000 and £10,000, which made £78,000 expended in promoting the interests of the Horticultural Society. Had they acted as ordinary landlords and tenants they would have had to receive a large sum of money, but the only sum they received for property worth some £300,000 was £516 15s. 9d. The Commissioners had received nothing by way of rental, but by way of interest. He thought it a grave question whether the lease of the Society had not already fallen through [oh]. In two years from the present time, if there should be no payment of rent, the real question would be whether the forfeiture of the lease would not arise. The debentures of the Society could not be worth a single farthing, and the Commissioners would distrain on every article—the arcades, the conservatories [no, no], the trees, and the shrubberies, which were also distinctly specified as being forfeited to the Commissioners in case the rent were not paid. That was a very serious matter [hear, hear]. He deeply regretted that the Council should have placed themselves in hostility to Her Majesty's Commissioners, but when he saw the extraordinary step taken by the present Council when the Commissioners made arrangements for letting on lease a certain amount of their land, he was astonished. Instead of going to Her Majesty or the Home Office, the Council petitioned the two Houses of Parliament to prevent the Commissioners doing the very thing they had the power by their Charter to do. And four out of the five reasons they laid before Parliament were reasons which applied equally to the great national buildings about the gardens as to private buildings. The late Prince Consort would never have allowed this agreement to have been entered into unless with the understanding that the gardens should be surrounded with buildings. He hoped the meeting would agree to the amendment [no, no]. One of the last meetings of the Commissioners took place at Marlborough House, under the presidency of H.R.H. Prince of Wales, and then they had the opinion of Sir G. Jessel telling them that the present Council was not legally elected. Under that it was impossible for the Commissioners to ratify any agreement with a Council not legally elected. He had moved that the whole of the recommendations with the exception of this one should be adopted, it was seconded by the Duke of Edinburgh and passed; and so much for acting in hostility to the Society.

Mr. W. A. LINDSAY (Secretary), remarked that the Commissioners had refused to pay the Society £1043 due to it. In 1872 the late Council made a mistake by paying £1200 to the Commissioners on the understanding that if it was found there was not a sufficient surplus to pay the rent it should be refunded, but it had not been [hear, hear]. As to the Commissioners refusing to ratify the arrangement, it was not a matter for the Council, as the Board of Management represented the Commissioners. The fact was, that Mr. Cole objected to deal with them unless they were empowered by the Council to deal with him, and stated that he and Dr. Lyon Playfair had power to negotiate. If the Committee of Management chose to repudiate Mr. Cole's action on that occasion, Mr. Cole ought to have resigned his appointment. When he referred to the fact that upon one occasion the late Council expended £500 upon a statue, he asked whether that was a proper way to administer the funds of the Society? There never was so careful a statement of accounts as that presented this year, and there never was a Council which tried more assiduously to forward the interests of the Society [hear, hear]. As to the amendment, they were quite certain the Council had been rightly elected, but if it was the desire of the Commissioners to institute a suit against them they could do so. It was evident a large majority were in favour of the course proposed by the Council [hear, hear].

Mr. BATEMAN, with reference to Mr. Bowring's remarks, said

he had found, by refreshing his memory, that instead of the Society coming as a suitor to the Commissioners, the Commissioners, at the time when the Society was in great difficulty at Chiswick, were contemplating the preparation of the central part of the land at South Kensington as a garden, to be surrounded by Italian arcades, and had conceived the plan of doing what the Horticultural Society were afterwards made to assist them in doing. It was therefore above all things necessary that the Fellows should form an accurate judgment of the rights of the case between the Society and the Royal Commissioners [hear, hear].

Mr. QUILTER thought the best course was to adjourn the meeting for a month [no].

Mr. GORSON had arrived at the opinion that the Council had not been legally appointed, and they ought to put the Council in a proper position. He should now move—

The CHAIRMAN.—You are out of order. You cannot move an amendment upon an amendment; you must dispose of the amendment first [hear, hear]. I shall now read the amendment.

The amendment was then put, and on a show of hands there were—

For the Amendment .....	52
Against it .....	71

Majority against it .....

Mr. COLE demanded that proxies should be taken.

When the proxies were counted the poll stood thus—

For the Amendment { Show of hands .....	52
{ Proxies .....	173
	—225

Against the Amendment { Show of hands .....	71
{ Proxies .....	160
	—231

Majority against the Amendment..... 6

The announcement of the numbers was received with cheers.

The CHAIRMAN then put the motion for the adoption of the report, which was unanimously carried.

Lord A. CHURCHILL moved that the resignation of the old Council be now accepted.

The CHAIRMAN.—That was done at a former meeting.

A vote of thanks was then given to the noble Chairman, and the meeting then separated, having lasted over two hours.

At the Annual General Meeting of the Royal Horticultural Society, held on the 10th, my name was so freely used by some of the speakers, that I feel you will allow me the opportunity of writing my defence. I was accused of "plotting against the Society," and one member who sat behind the table told me "I was not a Fellow, but an honorary member," "that I had no business in the room, or power to pass anyone into the Gardens," and that "if I was not ashamed of myself I ought to be, as I had acted most disgracefully, &c." I affirm that the Society unanimously elected me a forty-guinea life Fellow, in consideration of which I hold two transferable tickets, with certain privileges. The latter part of the accusation must be answered at more length.

I have been intimately acquainted with the business of the Society for thirteen years, during which time many clever horticulturists and financiers have sat on the Council. At the end of my connection with the Society the old Council had been replaced by gentlemen, the validity of whose elections had not only been questioned, but the resignations of their predecessors disputed by eminent legal opinions. As a well-wisher of the Society I consider that these doubts should be placed beyond all question, and therefore I did not hesitate to act with Lord A. Churchill, Sir Daniel Cooper, and others, in trying to induce the Fellows seriously to go into the matter, either by means of a friendly law-suit, or the highest legal opinion obtainable; in fact, I did the secretarial part of the work, and some few of the circulars bore my name. A resolution was settled upon, and ordered to be printed for circulation amongst those attending the meeting, experience telling us that no fair hearing could be obtained or views explained with any clearness when the matter differed from the views of a certain section. For the above reason I passed two people on my tickets (not into the meeting-room, for that I knew to be wrong) to distribute the papers, and for these offences I have the latter part of the accusation made against me.

At the risk of hints as to the "decease of my trumpeter," I cannot help adding in conclusion, that so far from "plotting against the Society," I have been consulted by these in power upon many important points, to which I have never hesitated to

give my best attention and advice, besides devoting many weeks of my time in aiding the work of the Society long after receiving any remuneration. I do not regret this, far from it, and I only name it now to show I am not the traitor some (though very few I am happy to say) would make me out.—JAMES RICHARDS.

#### REPORT OF THE COUNCIL TO THE ANNUAL GENERAL MEETING.

The Council, in presenting their Report, have to congratulate the Society on the success of its operations during the past year.

The Chiswick Garden has been well kept up, numerous grafts of fruit trees have been distributed, and every effort made that they should be of the best kinds. An extensive trial of Potatoes and French Beans has been made, with a view to determine the best varieties and to settle their nomenclature. Every effort ought to be made in view of the interests of country Fellows to promote the efficiency of the Chiswick Garden. The Directors' Report is enclosed with this paper.

The Council announce, with great satisfaction, that Dr. Hooker, President of the Royal Society, has accepted the chairmanship of the Scientific Committee; and they take the opportunity to again invite Fellows to send for examination to the Society's Scientific, Fruit, and Floral Committees any specimens which may appear to be of interest or importance. The provincial Show held at Bath was a horticultural and financial success, but it is proposed to make very material alterations in the arrangements of future provincial shows, with the object of increasing their scientific value and social comfort.

At South Kensington the Shows have been very successful; the displays of pot Roses have surpassed those of previous years, among which Mr. Paul's enormous exhibition attracted great admiration, while the fine collections of spring and alpine flowers have greatly stimulated cultivation in those special directions. Messrs. Waterer's Rhododendron tent gave the public a great opportunity of selecting specimens of this tribe of plants, and to Lord Lonsborough special thanks are due for displays of Orchids which were objects of universal interest and curiosity.

After consultation with some of the principal exhibitors it has been thought good to reduce the number of the shows, with a view of increasing their importance, and it is hoped that this course will meet with the unanimous support and co-operation of those interested in these arrangements.

To increase the public usefulness of the Gardens, it has been decided to reduce the admission fee on Saturdays to 1s., and to make Fellows' orders not available for that day.

An intimation having been conveyed to the President, in July last, that His Royal Highness the Prince of Wales desired the use of the Society's conservatory for a hall to be given to their Imperial Highnesses the Czarevich and Czarevna, the Council felt that they would best meet the wishes of the Fellows by at once placing the conservatory at His Royal Highness's disposal. In their opinion no precedent for the use of the Society's Gardens for any private purpose has been thereby created.

It is important for the interests of the International Exhibition, held yearly at South Kensington, that arrangements should be from time to time entered into with the Royal Horticultural Society for the purpose of facilitating communication between the two wings of the Exhibition building, and for the general convenience of visitors to the Exhibition and Gardens. Last year the present members of Council, who only entered upon their duties a few days before the opening of the Exhibition, found the Exhibition Commissioners very desirous to enter into some such arrangements. Committees, selected by the Exhibition Commissioners on the one hand, and by the Council of the Royal Horticultural Society on the other, met to negotiate these arrangements, and it was understood that both parties had full power to treat. Without such arrangements the Commissioners would have been unable to fulfil contracts with exhibitors already made, and without the sanction of the Royal Horticultural Society.

An agreement was accordingly entered into, and as a special act of courtesy to the Exhibition Commissioners, the Royal Horticultural Society consented to allow it to come into operation before it was finally executed. The Council have, however, to state with regret that the Commissioners having enjoyed the full benefit derivable from the terms agreed upon, afterwards refused to ratify important parts of the agreement.

The Council have deemed it advisable to employ the services of a professional accountant in making up the financial statement of the year. They now present the accountants' report—and a copy of the accounts, duly audited, may be had on application at the Secretary's office.

On 4th April the balances in the bankers' hands were:—

At credit of the Revenue Account .....	£2265 19s. 9d.
Do. of the Provincial Show Account .....	£1186 19s. 6d.

The Council found debts owing by the Society, some of them of not less than five years' standing, and amounting up to

January 1st, 1873, to £4026 18s. 5d. The most pressing have been met, to the extent of £3635 15s. 4d., but £391 3s. 1d. still remain.

All the liabilities of 1873 have been paid up, except a sum of about £3096 3s.

The Council have to observe that by the agreement of 1860 it was provided that the Expenses Committee, consisting of six members, three appointed by the Exhibition Commissioners and three by the Royal Horticultural Society, should meet from time to time to sanction the payments made by the Society out of the receipts from the Gardens. Since the year 1871, however, this Expenses Committee have not met, owing, during the past year, to persistent refusals to do so on the part of the Exhibition Commissioners.

In July, 1872, a payment of £1200 was made by the Society to the Exhibition Commissioners on account of rent, and in anticipation of the accruing surplus. To no part of this sum had the Commissioners any claim under the agreement of 1860 unless it existed as a clear surplus on the receipts of the year. At the end of the year only a part of this surplus existed; and although the payment was made under a distinct understanding that in this case the money, or any part of it not due, should be refunded, the Council, after many applications, have failed to recover from the Exhibition Commissioners the sum in question, amounting to about £931.

There is one item in the financial statement to which the Council wish to call the serious attention of the Society—the life compositions.

By the agreement of 1860 life compositions were authorised with the proviso that, during the continuance of the lives compounded for, one-fiftieth of the amount of such compositions should be chargeable in each financial year as part of the receipts of the Gardens. This composition money was for some years funded, but about ten years ago the then sum invested was spent.

So long as the actual receipts for life compositions in each year equalled this charge against the Society no inconvenience arose. As, however, the charge increased year by year, while the receipts under the head of life compositions diminished, the time at last arrived when the receipts no longer equalled the charge. Last year the deficiency was £464 2s., and this deficiency may annually recur.

Doubts having been raised as to the validity of the proceedings of the Meeting of 4th April last, which received the resignation of the old and elected the new members of Council, a case was laid before Mr. Lindley, Q.C., the standing counsel of the Society, and the late Attorney-General, Sir J. Coleridge. These eminent lawyers stated their opinion that the proceedings were perfectly valid, and the present Council legally elected.

In December last the Council received a requisition, signed by twelve Fellows, to call a Special General Meeting for the purpose of passing a bye-law enabling all Fellows to vote by proxy. This Meeting was held on the 8th January, and a motion was passed that the Council should re-enact a bye-law which, in the course of the preceding year, had been rejected by the Society. The Council consider that the question of proxy-voting will have to be argued on much more general grounds than those argued at the Meeting. They therefore intend to invite further discussion upon the question, when more of the Fellows are in London, and, pending the decision then to be arrived at, are unable to comply with the instruction carried at the Meeting of the 8th January.

#### REPORT OF THE ACCOUNTANTS.

"8, Walbrook, London, E.C., January 31st, 1874.

"To the Council of the Royal Horticultural Society, South Kensington.  
"GENTLEMEN,—In compliance with your instructions, we now beg to forward the revenue account of your Society for the year 1873, duly audited, and showing (after bringing forward the sum of £391 3s. at debit on the 31st December, 1873) a balance against the Society on the transactions of the past year of £441 15s.

"This amount has been increased by charging the account with £2341 7s. 7d. liabilities belonging to previous years, but paid in 1873, in addition to others, still outstanding, of £391 3s. 1d., so that the balance existing at the debit of this account on the 31st of December last, was £3474 5s. 8d.

"We have not prepared a balance sheet showing the position of your Society, as our instructions were not to that effect.

"To do this would necessitate the examination of many balances (representing very considerable amounts), which seem to have been carried forward for a long term of years, the thorough investigation and testing of which would be a work of great labour and very considerable expense.

"The balances at your bankers on the 31st December, 1873, was £375 19s. 1d.; and there was in hand (petty cash) on the same date, the sum of £3 4s. 6d.

"We are, gentlemen, yours faithfully,  
"C. F. KEMP, FORD, & Co."

#### REPORT OF THE CHISWICK BOARD OF DIRECTION, FEBRUARY, 1874.

The Board of Directors have to report that the garden labour at Chiswick, which for the last year or two has been very much directed towards the various works of re-arrangement, consequent on the recent curtailment of the area of the garden, has, by reason of the completion of those works, been available for other purposes, so that during the season of 1873 it was found practicable to take up a fair share of the experimental trials of

vegetables and flowers, for which, in conjunction with the supply of decorative plants for Kensington, the garden is now more especially designed. These trials were not indeed wholly suspended during the period when the alterations were in progress, but they have now again assumed in some degree the more extended form and comprehensive character which the importance of the subject demands.

In the Fruit and Vegetable Department the distributions to Fellows and correspondents of the Society comprise 60,000 packets of vegetable seeds and 1543 packages of cuttings of Vines and scions of fruit trees. Amongst the latter was an important collection presented to the Horticultural Society of Victoria, of which the officials of that Society report that "owing to the lengthened voyage of the ship by which they were forwarded, a large number perished."

A considerable collection of Cherry trees of pyramidal form were, some few years since, got together; but they proved to be extremely unsatisfactory, owing partly to the difficulty of efficiently protecting them; they have therefore been dispensed with, and have been replaced by young trees planted against the boundary walls, and which are to be trained as single cordons.

An extensive collection of pyramidal Plum trees, which had become too much crowded, have been transplanted and re-arranged at wider intervals so as to admit of their fuller development.

The trees planted out in the orchard-house had grown so freely that they had already become too much crowded; and as thinning-out in some form was necessary, the opportunity has been taken to lift and pot the pyramidal trees, chiefly Peaches and Nectarines, and to re-arrange the standards, which are still planted out. In this way the overcrowding of the trees may be more readily prevented by the temporary removal of the potted trees.

Many new varieties of the Grape Vine have been introduced to our gardens within the last few years, and it has been thought desirable to devote a house to the growth of these, with a view to a closer observation of their peculiarities and merits. The small curvilinear vine, in which the different sorts of White Muscats had been brought together some years since for a like object (which has been accomplished), has been set apart for this purpose.

The experimental trials and comparisons of the varieties of different vegetables have, during the past season, been taken up chiefly by such important subjects as Potatoes, Peas, and Kidney Beans. Of the Potatoes, the trial has been very complete and satisfactory, some 271 reputed varieties having been planted, though this number has been greatly reduced by ascertaining that many of the names are synonyms of others. Some of the more recent American varieties have proved to be highly meritorious, as have some of the English seedlings raised by Mr. Robert Fenn, of Woodstock; and nine first-class certificates have been awarded by the Fruit and Vegetable Committee. The trial of Peas has been a continuation of that of the previous year, and in this case five certificates have been awarded, all to novelties raised by T. Laxton, Esq., of Stamford. The trial of Kidney Beans, though only a partial one, has resulted in the award of five first-class certificates. These trials will all be duly reported on in the Journal.

It is proposed to recommend to the Committee to continue during the present year the critical examination of Potatoes and Kidney Beans, and to add thereto the varieties of Celery, which now seem to be in need of another revision, with the view of ascertaining which are the most profitable and meritorious.

In the Floral Department similar activity has been displayed. The distributions comprise 60,000 packets of flower seeds, 3925 plants allotted by ballot, and 873 packages of cuttings of plants; while for the Society's own use at Kensington 12,876 plants have been grown and furnished for the decoration of the Conservatory; 63,016 plants have been expended on the summer bedding, and 31,833 on the spring bedding of the past year. In addition to these, 37,917 plants have been supplied during the months of November and December to furnish the display during the ensuing spring.

The comparative trials of flowers have been chiefly amongst Zonal Pelargoniums (which are so numerous and important as to require annual revision), Fuchsias, Pentstemons, and Phloxes. Of the Pelargoniums no fewer than 522 varieties were planted out for observation; and amongst these, in their various sections, the Floral Committee distributed twenty-nine certificates. The salmon-coloured and white-flowered varieties of Pelargoniums not being found suitable for open-air culture, but being highly decorative as cool greenhouse plants, the Committee in 1872 decreed that a trial of these as pot-plants should be made, and fifty-four varieties were thus grown, with the result that one was specially certificated, and a selection of the most useful of the remainder approved and recommended for in-door decorative purposes. In the case of Fuchsias 182 varieties were grown, and seventeen of these were certificated as desirable decorative sorts; while of Pentstemons and Phloxes large collections were planted out, and four of the former and seven of the latter were

selected for certificates. The report on these collections will be found in the number of the Journal just issued.

The collection of Hardy Herbaceous Perennials has been enriched during the season by the presentation of three hundred species and varieties from the Royal Gardens, Kew, and of numerous species of Aster from the Floral Director. Of these latter plants it was hoped that a large collection might be got together with a view to their examination by the Professor of Botany; and contributions for this purpose will still be gladly received by the Gardener-in-chief.

A very handsome new Fern, which sprang up in one of the propagating houses a year or two since, and which is now a well-developed specimen, has been described and figured during the past year in the Journal under the name of *Pteris serrulato-tremula*. It is very remarkable that this plant, supposed from its compound appearance to be a hybrid between *P. tremula* and *P. serrulata*, though forming spores in abundance, cannot, so far as yet experienced, be increased by this means, the typical *P. tremula* only being produced from them. It is probably, therefore, after all, only a spore-sport of this well-known plant.

Of other matters which have come before them, the Directors think it only right to mention that the Gardener-in-chief has reported most favourably to them of the action of a new wrought-iron boiler, erected by Messrs. T. Green & Son, which has done its work most efficiently and economically; and they are informed that a similar boiler is now most satisfactorily heating the Conservatory at Kensington.

Professor Thiselton Dyer's lectures to the young gardeners at Chiswick, on elementary matters of science bearing upon horticulture, and which were briefly referred to in the Report of 1873, were listened to with attention and advantage by the young men to whom they were addressed. It is much to be desired that instruction in the higher branches of horticulture should also be given.

#### STATEMENT OF ACCOUNTS from January 1st to December 31st, 1873.

EXPENDITURE.		£	s.	d.	£	s.	d.
Balance brought forward from 31st December, 1872					376	19	9
<i>By Chiswick Garden Expenses:—</i>							
Rent, Rates, and Taxes	198	11	9				
Labour	1202	18	3				
Implements, Manure, &c.	285	14	10				
Repairs	150	19	6				
Trees, Plants, &c.	24	1	4				
Miscellaneous	57	2	7				
				1919	8	3	
<i>By Expenses of Management:—</i>							
Salaries	529	3	2				
Horticultural Directors, Froid and Floral Committee	459	7	11				
Foreign Importations	5	0	0				
Postages	122	16	10				
Reading Room	24	3	9				
Gas	25	17	10				
Journal	1	15	0				
Wages	365	15	9				
Printing, Stationery, and Almanacs	549	4	7				
Miscellaneous	37	1	8				
Distribution of Plants	115	6	5				
Lindley Library	6	2	7				
				2,241	15	6	
<i>By Expenses of Exhibitions:—</i>							
Tents account, last instalment				500	0	0	
Advertising	234	15	9				
Prizes and Medals	114	11	5				
Bands	550	4	0				
Police	8	8	10				
Gardeners' and Judges' Breakfasts and Expenses attending Shows	391	14	2				
Superintendent of Flower Shows	100	0	0				
Albert Hall	0	13	4				
				1400	7	6	
<i>By Kensington Garden Expenses:—</i>							
Labour	912	10	5				
Rates, Taxes, and Insurance	1,271	12	0				
Water	85	15	0				
Repairs	248	17	6				
Implements, Manure, &c.	217	18	5				
Gravel	1	8	0				
Trees, Bulbs, and Shrubs	325	5	7				
Superintendent's Salary	100	0	0				
Miscellaneous	9	9	9				
Alterations	88	1	11				
Engineer for Waterworks	634	1	3				
				3905	19	10	
Glaisner's Tables				125	19	0	
Rhododendron Exhibition				33	12	7	
Commission on Rent of Arcades				33	13	4	
Interest on Debentures				1956	2	0	
				12,493	12	9	
Liabilities on Current Account, 1873		1763	3	0			
" for Prizes, 1873		1833	0	0			
" on Current Account, 1872		391	3	1			
				3487	6	1	
Total				15,980	18	10	

#### RECEIPTS.

	£	s.	d.	£	s.	d.	£	s.	d.
Life Compositions				357	0	0			
Admission Fees				348	12	0			
Annual Subscriptions				8194	0	0			
" outstanding				122	10	8			
Garden Produce Received	245	9	6						
" outstanding	83	19	5						
				329	8	11			
Daily Admissions and Promenades				442	4	11			
Exhibitions and Fêtes	870	1	6						
Dues by Provincial Shows for Hire of Tents	200	0	0						
				1070	1	6			
Miscellaneous				19	15	10			
Interest on Davis's Bequest				59	15	8			
Balance of Provincial Show									
Account at Bankers	268	19	8						
Less owing to R. H. S. for Hire of Tents	200	0	0						
				68	19	8			
Loaned to the R. H. S.	1600	0	0						
				1868	19	8			
Conversations				10	9	11			
Advertisements				32	15	0			
Annual International Exhibitions				1110	0	0			
				13,965	14	1			
Tents, subject to valuation, Account				500	0	0			
Cash in hand at Bankers	375	19	1						
" Petty Cash	3	4	6						
				379	3	7			
Balance				1136	1	2			
Total				15,980	18	10			

#### FACILITATING FERTILISATION.

I REMARK, in THE JOURNAL OF HORTICULTURE of January 29th, an article on the process indicated by my friend Mr. Daniel Hooibrenk, of Vienna, for facilitating the fertilisation of plants by touching the stigma with a pencil dipped in honey.

Although Mr. Daniel Hooibrenk has done everything in his power to make this process known, and has advocated it energetically, it is but just to state that he is not the inventor of the process, and that it was previously made known by the late Mr. H. Lecoq in 1862 in his work entitled "*De la Fécondation Naturelle et Artificielle des Végétaux, ou de l'Hybridation.*"

Mr. H. Lecoq was at that time and till his death the Director of the Botanical Garden of Clermont-Ferrand.—JEAN SISLEY, Lyons.

#### CELERIAC OR TURNIP-ROOTED CELERY CULTURE.

THIS delicious vegetable is very seldom seen in perfection in our gardens, and yet it is one of the very easiest to grow, and one of the most useful. It can be used as a second-course vegetable, and also as a salad, boiled and sliced like Beetroot, while for flavouring soups it is almost, if not quite, equal to ordinary Celery; besides, it can be had in good condition when good Celery is not procurable. It is also very hardy; it takes a great amount of frost to injure it, and it is not so likely to suffer from insects and diseases as the ordinary Celery; indeed, I have observed Celery grown close to it quite ruined with a fungus similar to that which attacks the Holly-hock, and Celeriac was perfectly free from it.

To grow it well it should be sown thinly on a hotbed in the last week of March or first week of April. As soon as the seedlings are up the lights should be taken quite off on every favourable day, and, when large enough to handle, the plants should be pricked-out about 3 inches apart in equal parts of rotten dung and loamy soil. If it has a little warmth under it, it will do all the better. When it fairly is established in this, before the leaves touch, it should be planted in its permanent quarters.

The ground to receive it should be quite as liberally dressed as for the other Celery—that is to say, it should have 3 or 4 inches of good manure spread over the top and forked-in, keeping the ground level. Take the plants carefully up with a trowel; or cut into squares with a spade, and plant in rows 2 feet apart and 15 inches from plant to plant in the row. Very little attention will be necessary after this, unless the ground is light and the weather dry, when the plants may require water once or twice. They will be fit for use by the end of September, and may be taken up as required till there is danger of their commencing to grow a second time, when they should be taken up and kept in a similar way to Beetroot.

The treatment I give to this vegetable is exactly the same as that given to the main crop of Celery up to the final transplanting. The first week in April is the best time in the

whole year to sow for producing really good Celery, and not February or the beginning of March, as many would now have one believe. Sow late and thinly, prick-out as soon as large enough to get hold of, transplant finally with good balls before the leaves touch, and never allow it to receive a check. These are the only secrets in growing Celery or Celeriac.—W. TAYLOR.

### VARIETIES OF POTATO.

On reading his remarks on "Varieties of Potatoes" in last week's Journal, I have been greatly amused with the self-sufficiency of a contributor signing himself "A.," and I have no doubt the Royal Horticultural Society and *Irish Farmers' Gazette* will be equally so.

"A." professes to have great knowledge, and on the strength of this assumes at once the attitude of censor and of judge. What his qualifications are to either of these positions I do not know, but he betrays in his communication such an amount of ignorance on the subject upon which he writes, that I am led to think that his pretensions cannot be supported. To justify what I say, I ask you to refer to his communication. "A." asks, "What is Kentish Ashleaf?" He ought to have acquainted himself of this before he wrote and presumed to call in question the decision of the Committee who do know it. I will tell him. Kentish Ashleaf is that form of the Ashleaf which has been grown in Kent and by the great market gardeners round London for years before "A." was born, unless he is more than a century old, and is quite distinct in many respects from the old Ashleaf. It is a much stronger grower, and greatly more prolific than the old Ashleaf, which is easily distinguished by its dwarf growth, small leaf, and earlier maturity, on account of which it is preferred for forcing in frames. I find the true characters of the different Ashleaf varieties well described in the "Gardeners' Year-Book" for this year, to which I refer "A.," as he does not seem to know that there are three types, perfectly distinct, known by the name of Ashleaf.

In speaking of "Lapstones," "A." says that Yorkshire Hero was raised from the seed of that variety, and does not appear to know that Mr. Almond raised, or believes he raised, it from a graft-hybrid. So long as "A." confines himself to write on subjects he understands he writes well and instructively; but when he goes out of his way to run a tilt at such a body as the Committee of the Royal Horticultural Society, and sets up his limited means of observation against the infinitely greater advantages of the Society, he is doing himself an injustice, while he does the Committee no harm.

Does "A." know that, in making the attack upon the Committee of the Society, that he is setting his opinions against such men as Dr. Hogg, Mr. Barron, Mr. Fenn, Mr. Dancer, Mr. Douglas, Mr. Record, Mr. Earley, Mr. Woodbridge, Mr. Perkins, Mr. Beale, Mr. Barr, Mr. Nash, and a host of other practical men, whose sole object in these trials is to elucidate the truth from data which "A." unless he has extraordinary opportunities, cannot possibly possess?—J. P.

### FLOWERS FOR OUR BORDERS.—No. 26.

#### MITRARIA COCCINEA.—SCARLET MITRARIA.

MITRARIA COCCINEA has the merit of being the only hardy plant of its order yet discovered. We do not, however, use the term "hardy" in its most extended sense; in very severe winters some protection would, doubtless, be necessary; but Messrs. Veitch, of Exeter, the importers of this fine plant, are of opinion that it would bear ten or twelve degrees of frost without injury.

The habit and general appearance of the *Mitraria* will be sufficiently understood by a reference to our figure. Its stems are unusually slender, branched, and, in specimens of sufficient age, reach the height of about 3 feet. The foliage is small, and somewhat brittle and succulent, with a number of short hairs scattered over its upper surface. The flowers are numerous, and produced singly from the axil of the leaves, on foot-stalks 2 inches long, with a ventricose corolla, from the mouth of which protrudes the long slender style. Its season of blooming extends from May to the end of June.

The soil most suitable for its cultivation is a mixture of good turfy peat and loam, in the proportion of three parts of the former to one of the latter. Where this is not at hand any soil containing a tolerably large proportion of leaf mould may be used, avoiding those of a poor sandy character, as well as pure loams deficient in decayed vegetable matter. When

grown out of doors it must be planted under a north wall, or screened from the sun's influence by a fence, for it will not flourish except in the shade. Until its hardiness in the northern and eastern counties has been more fully tested we would not recommend its exposure during the winter months without some protection. A small hand-glass or a large inverted flower pot will offer a ready means of warding-off the effects of frost; and to these may be joined, as an auxiliary, a small heap of coal ashes. Where there is the convenience of a cold frame, the roots may be potted in the autumn and preserved with less risk.



*Mitraria coccinea.*

If grown as a pot-plant it will be necessary to provide it with a cool, shady window; and an arid atmosphere must at all times be avoided. Especial attention must be paid to the drainage, for the soil in which it appears to succeed best being of a retentive nature, too great an excess of moisture must be guarded against by a good supply of broken crocks.

Gesneraceous plants, as well as all others with tuberous roots, usually require to be kept quite dry when at rest; but with the *Mitraria* a somewhat different treatment will be necessary, for its fibrous roots will not bear the complete withdrawal of moisture. It will, therefore, need an occasional watering during the winter months, though the soil must be kept only in a slightly moistened condition, and the plant should be placed in a cool situation—by no means in a warm apartment.

Its propagation presents no greater difficulties than that of the other plants of its order. The easiest mode of increasing it is by division of the roots in spring; but cuttings may also be taken at any time during the spring and summer months, and struck in any light vegetable soil under a bell-glass or tumbler.

It is a native of the Island of Chiloe, a circumstance which will explain both its comparative hardiness and its preference for a cool moist atmosphere and partial shade.—(*W. Thompson's English Flower Garden, Revised by the Author.*)

### ALARUM THERMOMETERS.

WHEN in Edinburgh recently Mr. Bryson, philosophical instrument maker, Prince's Street, called my attention to a most ingenious arrangement of thermometers and galvanism, by which the temperature of the external air, or that of any glass

structure, can be indicated at any moderate distance, and it occurred to me at once that his invention could be made available in a great variety of ways for horticultural purposes: hence my reason for troubling you with a few suggestive remarks about his apparatus.

In explaining the mode of its action Mr. Bryson said, "Suppose you wish to be warned during the night when either the external air or that of any hothouse has fallen to a given point, you fix the indicator to that degree, and the moment it falls to it a bell fixed in your room begins to ring, and continues to do so till the temperature rises to about the given point again, unless it is thrown out of gear by yourself." This is what he calls the minimum indicator. There is also a maximum thermometer, which is set in the same way, so that the moment the heat exceeds that at which it is fixed the bell shall ring, this begins and keeps on till the temperature falls below the point fixed upon.

I need hardly suggest the variety of ways in which such an arrangement would be useful to gardeners, and more especially to amateurs, in the management of hothouses. For instance, when the weather is variable and sudden frosts set in, especially towards morning, the thermometer outside the window could be set to indicate 36°, and this would give a margin in order to get up heat before the freezing point was reached. In the case of amateurs who heat their small greenhouses with gas, they could have an arrangement in their bedrooms by which they could turn on more gas, and when the minimum point was exceeded the bell would cease, and they would know that all was safe. On the other hand, when the heat exceeded what was required, the damper could be dropped into the flue, or the gas shut off, as the case might be, by a simple arrangement like bell wires. In this way much trouble as well as fuel could be saved.—W. THOMSON, *Tweed Vineyard, Galashiels.*

### ROUGH PLATE GLASS.

THERE are, no doubt, those among our readers who are old enough to remember well nigh forty years ago. They will be able to call to remembrance some of what may be termed the curious incidents of gardening practice, as well as some of the many principles or theories promulgated during that time by those who regarded themselves as the legitimate teachers of the science of our profession. They will remember how ridiculously absurd were some of the schemes and systems which were expected to send horticulture bounding forward on the royal road of improvement. The Royal Horticultural Society of London had hollow pillars of brick built in its gardens, and filled with little besides bones and charcoal, in which to plant Vines and show practical men how to grow Grapes *ad libitum* in this unfavourable climate of ours. The next swing of the Vine-growing pendulum landed us up to the nose in dead pigs and slaughter-house refuse as the prime powers for producing fine Grapes. By means of planting a single row of White Providence Pine Apple 4 feet apart in pits of rich soil heated with stable litter, some extra large fruit were produced, and hence an economical champion steps into the ring of gaping and wondering practical gardeners, and tells them that all that is needed to produce the finest Pine Apples are a few bricks, and boards, and glass lights, and some stable manure; and promulgates the theory, so complimentary to practical men, that whoever amongst them put their employers to the expense of hot-water pipes, &c., for Pine culture, could only do so with the pure motive of getting a per-centage out of the bill! Another wrote articles in the papers by the ell, to prove that the intermediate or progressive system of shifting pot plants was all wrong, and that the soundest and most sensible theory was to transfer them out of thumb pots into the largest size required at once.

Then rough and comparatively obscure plate glass was recommended as the panacea for all the ills to which plants are heir in ordinary glass houses. Among other wonders which this glass was to work, it was to render shade in bright summer weather entirely unnecessary, and yet it was not to intercept the light in winter! But we are not writing for the amusement of our readers, else we could well nigh fill our whole number with the absurdities which have been propounded. Of course, such advanced notions, when brought to the test of public utility, were found to be indebted to imagination for their rose-coloured virtue; and so such projects, and even their projectors, are speedily well nigh forgotten by an ungrateful generation of men who have the opportunity of practising the science of horticulture. But of course we must not forget

that there is a gracious law in nature that makes our own offspring appear to us the most lovely in the world, and unhappily all are not sceptical, and such theories are followed by a certain number, merely on the faith of high scientific authorities.

But our heading reminds us that it is a few words on our experience of rough obscure glass that we want to say. When the fact is stated that we are getting rid of it as fast as we can, it is scarcely necessary to say that we do not like it for horticultural purposes. We are not sufficiently clear-headed to understand how it manages to shade in summer, and in winter let through as much light to Pines, &c., as clear horticultural sheet-glass; but we have mastered the fact that it so shades them—both in summer and winter; that we find those grown under it are never so stocky, nor so certain to fruit when required, as those grown under clear sheet-glass.

Our experience with Vines under rough plate is that they require the most exact treatment in the matters of air-giving and air-moisture to prevent the under sides of the leaves from becoming one mass of blotchy warts; and even with such care we have never been able to wholly avert this affection—said by some to be produced by something amiss at the root, but which, we venture to say, is brought on in ninety-nine cases out of a hundred by overmuch moisture in the atmosphere and deficient ventilation in dull weather, and of course obscure glass favours the malady. And for Orchid culture we do not find it so good as ordinary ground sheet-glass.

We could find a much more extended catalogue of faults with rough obscure glass, but we do not consider it necessary in order to warn our readers, who may be building or glazing, against it, more particularly north of the Tweed, where gardeners are not troubled with overmuch light, as a general rule.

Rough plate is recommended for horticultural purposes chiefly because scalding sometimes occurs to Vines and Pines under clear sheet-glass when the sun is powerful in our few bright months. Where such is the case, and the evil cannot be obviated otherwise than by slight shadings, we should recommend shading for a few weeks in preference to glazing with glass sufficiently obscure to keep light from the plants for three-fourths of the year. We have never experienced scalding under the clearest sheet when it is, as it ought to be, free from specks. Foreign sheet-glass is generally very specky, and all such glass should be rejected; and where a few specks do occur, they are easily obscured in summer, so as to prevent their acting on the foliage like lenses.

Unless it be in exceptional circumstances, and during the very brightest sun, we consider shading to healthy Pines and Vines, as well as many other things, a great evil. To increase the evil by using glass which prevents the fullest passage of light (for the sake of preventing any bad effects that may arise from its intensity for a very short time of the year, while such can be temporarily effected), cannot be sound practice. Light is the great consolidator and colourist of our flowers and fruits; besides, flowers and fruits may be called for in vain, like spirits from the vasty deep, unless vegetation is first perfectly matured by the agency of light.—(*The Gardener.*)

### GARDENING VICTIMISED BY SMOKE.

"Each day the wind rising with sooted wings,  
A sable cloud athwart the welkin flings."

I READ with great interest your articles on "Villa or Suburban Gardening," and try to glean what information I can from them; but, unfortunately, they fall short of what I require, for I have the misfortune—and it is a misfortune to all who love flowers—to live near a large manufacturing town, and my efforts to render my beds gay and flourishing are entirely frustrated by the volumes of smoke that pour over them from the tall chimneys in the neighbourhood. This evil is not touched upon by the writer of the articles in question, and I, for one, should esteem it a great boon if he, or any of your readers, would occasionally give the names of a few plants hardy enough to resist this abominable nuisance. Some flowers I find will thrive in spite of it, but very few. That lovely flower *Phlox Drummondii* does well, and a few more common annuals, such as *Clarkia*, *Eschscholtzia*, *Convolvulus* minor, but not major, *Marigolds*, *Mignonette*, *Asters*, *Stocks*, &c.; but these last only a short time, and I try in vain to make anything of *Scarlet Geraniums* or *Verbenas*. The same with *Roses*, except a few, and those do only moderately well. *Pinks* and *Carnations* I can grow, and for this I am thankful; but as I have a large garden just in front of the drawing-room

window, I am most anxious for a few hints as to any addition it would be possible to make under these unfortunate circumstances. I may add that the garden is on a hill, and much exposed to the west and south-west. The kitchen garden presents the same difficulties, and although I have sown Peas over and over again they never pay for the trouble. I have a good wall fronting the west, and on this I have occasionally a few Pears. Cherries I can make nothing of, except a small crop of Morellos on a south wall; the same with Apples and Plums, although we have many trees.—A LADY GARDENER.

[Many besides our correspondent would be benefited by such information as she seeks for, and we will readily give insertion to communications on the subject.—Eds.]

### THE VALUE OF FUEL.—No. 2.

It was shown in the last paper on this subject that the theoretical amount of heat yielded by different species of fuel was enormously modified in practice by the nature of the arrangements for combustion and for the utilisation of the heat. It is quite possible, in consequence, that the cheapest of fuels might become the dearest in use. Still, before considering the best mode of extracting the heat, it will be as well to ascertain which species of fuel is really the most economical at existing prices, supposing its full degree of heat could be employed. The prices will of course vary according to localities, but each person may correct the figures for himself.

Taking coal at 20s. per ton, the price per pound is about one-ninth of a penny. A ton of coal yields from 55 to 80 per cent. of coke—according to its quality—or say on an average fifteen hundredweight, which is about the weight of a chaldron of thirty-six bushels. It may be convenient to remember that as coke swells in making and thus occupies more bulk than the coal from which it is made, its weight is somewhere about half that of the same bulk of coal. The price also varies, but generally it is about 30s. per ton, or say one-sixth of a penny per pound. Of gas about 9500 cubic feet are made from each ton of coals—it is of specific gravity from .50 to .55 (air being 1.0, and 13½ cubic feet of air weighing 1 lb.), and this quantity of gas therefore weighs about 365 lbs. At 4s. per 1000 cubic feet, as furnished by the companies, its cost is therefore about 1½d. per pound. Petroleum at 2s. per gallon costs about 3d. per pound, and colza oil 6d. per pound.

If, therefore, we range these substances according to the cost of the quantity of each required to yield 10,000 units of heat we shall obtain the following results in pence and decimals of a penny:—

Colza	.....	3.3	Coke	.....	15
Petroleum	.....	1.5	Coal (Household)	.....	0.8
Gas	.....	.5			

Or, in other words, a given amount of heat which can be obtained from coal of ordinary quality for 1d. would cost nearly 2d. if derived from coke, 6d. if derived from gas, 1s. 6d. if derived from petroleum, and 3s. if derived from colza oil.

Obviously, then, coal is the fuel which economy points to, provided only we can burn it economically. The fact that other descriptions of fuel ever compete with it only shows the points in which we mismanage it. Coke yields no waste in the form of smoke, and gas no waste in the form of unconsumed carbonic oxide, while the oils, if used, are generally employed in lamps, or in an apparatus which extracts the whole of their available heat. Thus dealt with they may easily become more economical than coal, thrown in masses into a furnace which vomits forth unburnt gas and soot, and which is placed beneath a boiler so small as to let nine-tenths of the heat escape into the chimney. But these errors may be remedied. A wide and long range of furnace bars on which the fire may be kept thin and bright, and the coal gradually coked as it is pushed forward from the front, while air enough is admitted to consume fully the hot gases at the back, the admixture of clay balls to prevent caking and to make combustion slower while equally perfect, and a large increase of boiler-surface exposed to the flame and effluent gases, aided, if necessary, by the addition of a flue through which they may give off their heat in the house before entering the chimney, would enable us to use coal with the certainty of giving the full advantage which its real heating power and low price can afford.

But it must be kept in view that to permit this result space is absolutely essential. It is true, indeed, that whatever the fuel a large boiler-surface is alike indispensable, for iron can

only transmit a fixed amount of the heat applied to it in a given time, and if we want more heat we must increase the extent of iron exposed. But, over and above this, coal needs space for its combustion, for its nature is such that in a confined space it distils instead of burning. Now a large space is not always to be had, and in such cases either coke or gas may prove more convenient. But I may point out that in burning coal another element of great value is wasted, and might be preserved without loss of heat. Your readers are all aware that in gasworks a large amount of ammoniacal liquor is produced, the value of which as manure is immense. Each ton of coal (if of average composition) yields thus about 30 lbs. of ammonia, the money value of which at present prices is about 25s. I have shown in a recent number of the *Agricultural Gazette* of what enormous importance to the country it would be to save this waste, and I have also suggested that the general use of private gasworks would be a measure which would do something in this direction. Attached to gardens such apparatus would cost little trouble, and indeed in many establishments they already exist. But the resulting gas need not be purified when intended only for heating purposes (although it might be if desired also for lighting), since it would be equally available for heating although not thoroughly purified. In ordinary gasworks about one-third or one-fourth of the coke produced is used for heating the retorts in which the gas is made, but in gardens a large proportion of the heat thus expended could be recovered, either by the use of a flue, or of a boiler to utilise the heat from the furnace in which the retort is heated. The practical result would be that each ton of coal would yield about half a ton of coke for combustion in the regular stokeholes (over and above the coke employed in the retort furnace), about 9000 cubic feet or 350 lbs. of gas for use in heating whenever found convenient, and at least 20s. worth of ammoniacal liquor for application to the garden crops.

In future papers I shall deal with the arrangements for conveying the heat to the places where it is required, and the amount of heating surfaces necessary for given amounts of cooling surfaces.—J. BOYD KINNEAR.

### RAINFALL AT NASEBY WOOLLEYS, NORTHAMPTONSHIRE.

1873.	Number of days on which rain or snow fell.	Total amount.
		Inches.
January	14	1.54
February	13	1.30
March	12	2.59
April	12	0.70
May	13	2.67
June	9	4.08
July	14	1.88
August	15	2.62
September	12	1.02
October	10	2.13
November	12	2.33
December	6	0.52
Total	143	23.43

—H. HARRIS.

### NASH COURT.

I HAVE only lately seen an interesting communication on Nash Court in Kent, from Mr. J. Robson, in the number of THE JOURNAL OF HORTICULTURE for October 9, 1873. As the great grandson of the last Thomas Hawkins, of Nash Court, and a party to the sale of this old family place to Mr. Lade, the present owner, I send you a correction which you may like to notice. There are in Kent two estates, both of which bear the name of Nash Court—one in the Isle of Thanet and the other near Boughton-under-Blean, Faversham; and these have been inadvertently confounded in the history of Mr. Lade's house. The descent, I believe, is correctly stated through various families down to the Turners, of the Nash Court in Thanet, which, as long ago as when Hasted wrote his history of Kent (1790), had ceased to be a gentleman's mansion, and was used as a farmhouse and granary. But the error is in applying that descent to Nash Court at Boughton. That estate never passed away (for more than five hundred years) from the Hawkins family. It came to them by the marriage of Joan de Nash with Andrew Hawkins, as appears by the inquisition *post mortem* taken 17 Edward III. (1343). It descended from

father to son until it came to the Thomas Hawkins mentioned by Mr. Robson, who rebuilt the mansion, and who died June 21, 1766, at the great age of ninety-two. He was the grandfather of the last Thomas Hawkins, of Nash Court, who died September 23, 1800, leaving four daughters and co-heirs—

1. Bridget, married to Henry Roper, 14th Baron Teynham.
2. Mary, married to Sir Edward Knatchbull, Bart, of Mer-sham Hatch, Kent.
3. Anne, married to Lt.-Colonel Woodrefre, of Poyle Park, in Surrey.
4. Eleanor, married to Henry Gould, brother of Sir George Gould, Bart, of Old Court, Co. Cork, whose descendants in 1864 sold the estate to Mr. Lade.—G. F. DUNCOMBE.

## PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

**FRAGREA ZEYLANICA.** *Nat. ord., Loganiaceæ. Linn.,* Pentandria Monogynia.—Flowers white. "A native of the central province of Ceylon, where, according to Dr. Thwaites, it abounds on the banks of the river at Balangedde. It is one of the handsomest species of a fine tropical Asiatic and Polynesian genus, of which some twenty species are enumerated by Bentham in his notes on Loganiaceæ, published in the 'Linnæan Journal' in 1857, to which several more are now to be added from the Malayan Islands."—(*Bot. Mag.* t. 6080.)

**GAILLARDIA AMELYODON.** *Nat. ord., Composite. Linn.,* Syngenesia Frustanea.—Flowers crimson. "A very handsome October-flowering annual, a native of sandy plains in Texas and New Mexico, where it blossoms from the beginning of summer until the winter's frost cuts it off. The genus to which it belongs inhabits both temperate North America and extra-tropical South America, and consists of about eight species. The present species was discovered by Berlandier in 1827, and collected subsequently by Lindheimer in 1844, and by Drummond in 1845."—(*Ibid.*, t. 6081.)

**STAPELIA CORDEROYI.** *Nat. ord., Asclepiadaceæ. Linn.,* Pentandria Digynia.—Native of South Africa. Flowers green and purple-tipped. Dr. Hooker says, "I have named this very curious and distinct species after Mr. Justus Corderoy, of Blewberry, near Didecot, an old and an eminent cultivator of succulent plants, and for many years a valued correspondent of the Royal Gardens. It flowered at Blewberry in September of last year."—(*Ibid.*, t. 6082.)

**IRIS DOUGLASIANA.** *Nat. ord., Iridaceæ. Linn.,* Triandria Monogynia.—Flower lilac and white with purple veins. "Discovered by Coulter in California, and subsequently collected by David Douglas in 1833 in New California, but unknown to me from any other locality and collector, except from a mention of the plant in one of the reports of the United States' surveys, where it is stated to be found on hillsides in the Grass Valley, California, together with a large-flowered variety (how large it is not said), and longer pedicels (1 inch) at the Corte Madera, also in California."—(*Ibid.*, t. 6083.)

**ODONTOGLOSSUM ROSEUM.** *Nat. ord., Orchidaceæ. Linn.,* Gynandria Monandria.—"In its rose-coloured flowers this forms a remarkable contrast to the prevalent colour of the genus to which it belongs. It was discovered by Hartweg near Loja, in the Peruvian Andes, in a quite cool region, and was introduced by Mr. Linden from that region by his able collector, Mr. Wallis, in 1865."—(*Ibid.*, t. 6084.)

**STRAWBERRY**—*The Amateur*.—"We have to thank Mr. Barron, of the Royal Horticultural Society's Garden, Chiswick, for the examples of this fine and useful Strawberry. It is another of the triumphs of Mr. Bradley, whom we have had to thank already for Oscar, Dr. Hogg, and others of our finest fruits, amongst which this last is not by any means the least. During the past season abundant evidence has been adduced to prove it one of the most useful of its class. It has been named Amateur by Mr. Bradley, in consideration of its enormous cropping qualities, its free growth, and general suitability for amateur cultivators. The appearance of the plant is somewhat like that called Sir C. Napier, a stronger grower, however, better constituted, and with the leaves larger and of a deeper green, but somewhat subject to mildew. It is a very heavy cropper; and the fruits, which keep well, are very large, obovate, and cockscombed in shape, of a fine deep red colour, frequently with a heavy coating of glaucous bloom, like the Hautbois. The seeds are small and prominent. The flesh is firm and solid, of a deep red colour, and of a fine, rich, sparkling, sub-acid flavour, exceedingly pleasant to the palate. It is in all respects a very excellent Strawberry, and well

worthy of the first-class certificate awarded to it by the Royal Horticultural Society. In reference to this Strawberry we have received the following communication from Mr. Earley:—"The new seedling Strawberry named The Amateur has proved here to be a most valuable addition to existing varieties. Black Prince, President (of two separate growers), Dr. Hogg, Keens' Seedling, and British Queen—which does well on this ground—all ripened in the order here noted, and they were followed at the nick of time by Amateur, which well filled-up the gap existing between the last named of the older kinds and the valuable Frogmore Late Pine. The fruit of The Amateur is firm, and good for travelling. It grows close around its crown, requiring a less amount than usual of net-protection, and possesses a flavour more brisk and refreshing than Strawberries generally have, and this without anything approaching to unpleasant acidity. Indeed, to those who think Strawberries somewhat insipid, The Amateur will prove a boon. Small runner-crowns dibbled out on to good soil somewhat late in the season, were able to produce a crop."—(*Florist and Pomologist*, 3 s., vii., 25.)

## POINCIANA REGIA.

THERE are two well-marked varieties of this magnificent flowering tree in the East Indies, though I cannot say whether they are permanent or not. One has scarlet and yellow blossoms, and the other crimson and white. The former seems to be the most common, and is abundant at Madras, Secunderabad, Rangoon, and other places, while the latter prevails chiefly at Bangalore. Whether due to the climate or not I am unable to state, but it appeared to me that the foliage of the Bangalore plants was richer and more profuse, and consequently much more beautiful, than any that I saw elsewhere. Indeed, the luxuriance of the trees generally on the Mysore plateau seemed to indicate that there they had found conditions of soil and climate eminently favourable to their most perfect development. There are, however, many large and noble specimens at Coimbatore, near the foot of the Neilgherries; and in May, 1866, the road close to the town was all aflame with their gorgeous flowers. No object in the whole vegetable kingdom can, in my opinion, vie with this splendid Poinciana in the radiant wealth of its peerless bloom—not even the far-famed and glorious *Amherstia nobilis*, which I have seen in great perfection at Rangoon and Moulemein, in Burmah.

I have now and then heard the Poinciana regia called the Ostrich-feather Tree, without doubt on account of its beautiful foliage, which has much the appearance of broad spreading plumes; and at Bangalore it is occasionally known as the Flame of the Forest; but this name, though by no means inappropriate, is the prior property of another brilliant plant, the *Ixora coccinea*, to which it is also very applicable. Sometimes in India the term Gold-Mohur Tree is used to specify the Poinciana under notice, though it seems to be really owned by the yellow species *Poinciana elata*; and the name of Flamboyant is familiar to those who have seen the tree at the Mauritius.

Poinciana regia has apparently only been found in a wild state in Madagascar, whence it made its way many years ago to the Mauritius, and subsequently further east. It belongs to the Natural Order Leguminosæ, and the genus was named by De Candelie in honour of M. de Poinci, once governor of the Antilles.—G. E. B.

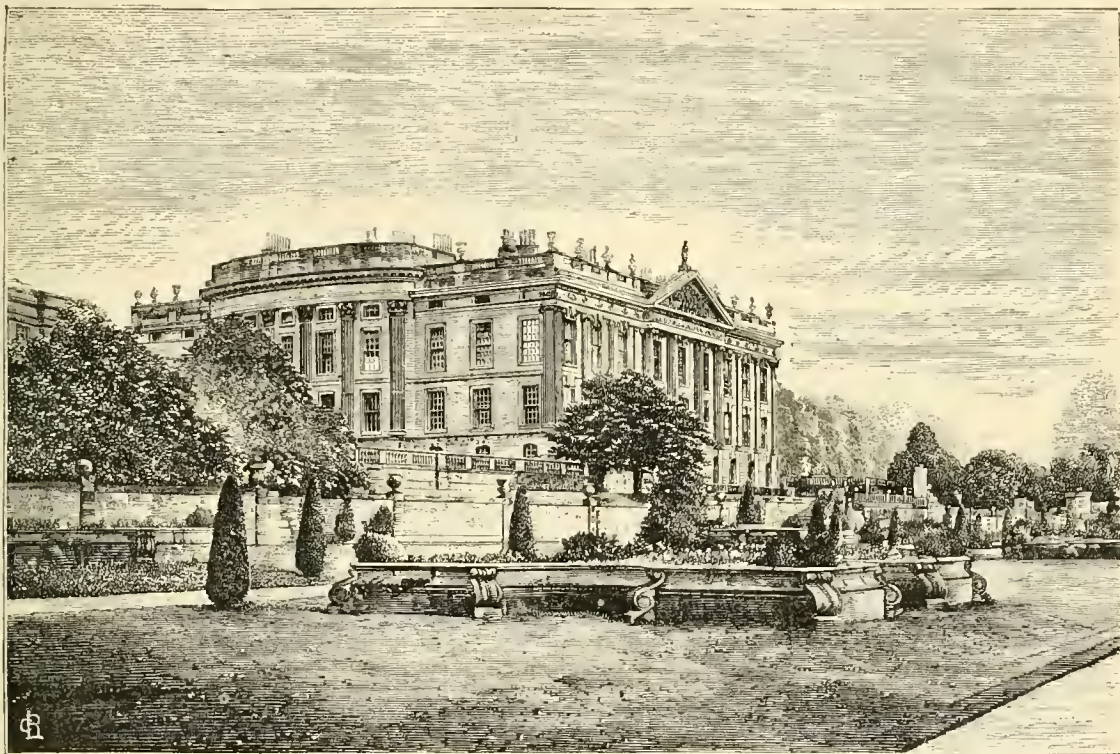
## CHATSWORTH,

THE SEAT OF THE DUKE OF DEVONSHIRE.—No. 2.

THE other most remarkable feature of Chatsworth is to my mind, as I have already said, the Victoria regia house. There may be, for all I know, other houses for aquatics as large as this, but I am sure that none can ever equal it in interest. No one standing within it can forget that it is the little germ from whence arose the gigantic glass house of 1851 and the Crystal Palace at Sydenham; but whether or no there are others larger, there are none more attractive. We have not only the queen of Water Lilies in excellent condition and in full flower; but round the house are different varieties of *Nelumbium* and *Nymphæa*, while Palms with their graceful and elegant foliage placed at the edge of the tank add their charm to the scene. Suspended, too, from the roofs are large baskets of *Achimenes*, some radiant with their brilliant blue flowers, and others like a sheet of snow; and thus again artistic beauty and horticultural skill go hand-in-hand.

I think few persons understand what are the requirements of such a place as Chatsworth, and the amount of responsibility that rests on the gardener who has to supply the wants of its owners. How few who, admiring the luscious fruits or brilliant flowers which adorn the tables of our great houses, think of how much the skill and intelligence of one man have been taxed to send them in just at the time that they are wanted. If they want to have an idea of it, then let them go through the long lines of houses contained in this garden—look, too, at the out-door arrangements, and then say whether he who has all this on his shoulders has not his work cut out for him. Such were my own reflections on going through house after house in the kitchen garden. Here, for instance, are two houses entirely filled with pot Vines. Here, again, are houses after houses filled with Black Hamburgs, Muscats, and all

the best kinds of Grapes, among them Mrs. Pince being noticeable and much used by Mr. Speed. The late houses, containing Black Alicante and Lady Downe's, were in fine condition. Then we came upon Peach and Nectarine houses, from whence the fruit had all been picked, but the trees with their well-ripened wood promised well for another year. Then we have a Fig house 50 feet long, all the trees being in pots; then a splendid house of Plums, and so on in every department of fruit-growing. Then as to flowers and plants, the same *embarras des richesses* meets one at every turn. Here, for example, is a circular house erected for *Amberstia nobilis*, that grand and noble paragon of India; while all round the front are fine specimens of *Nepenthes*, which have been planted out and trained to the glass. Here is *N. Raflesiana* with its dark green pitchers, and *N. sanguinea* with blood-red-coloured ones.



CHATSWORTH.\*

Here, again, *hybrida maculata* with pitchers streaked with reddish purple, and others of this strange family.

Turn we now to the three Orchid houses with such plants of *Vanda* as are rarely seen, *Aérides*, *Saccolabiums*, *Phalenopsis*, &c. Another house contains *Cypripediums*, *Miltonias*, then another *Dendrobiums*, *Cattleyas*, *Laelias*, &c.; while trained along the house is *Stephanotis floribunda*. And now we come upon a fine collection of *Sarracenias*; then to a stove filled with fine-foliaged plants for decoration—*Crotons*, *Dracenas*, *Marantas*, and allied plants; plenty, too, of Palms, which, in their young state especially, are so useful for this purpose. But as I have said, what description can ever give one a correct notion of the grandeur of such a place? It is, however, well to recollect that an intelligent gardener like Mr. Speed is not contented with dealing with grand totals; he is also conversant with smaller details. Here are two instances: We all know *Disa grandiflora* is a difficult plant to grow well. I found here, however, a fine specimen, but Mr. Speed told me there was only one position in the house that suited it. He had tried it in others, and it immediately began to droop. This was near to the door in an intermediate house; here it received the full air, and seemed to rejoice in it. The other instance was *Ouvirandra fenestralis*, the curious Madagascar Lattice Plant. Although often grown, how seldom is it grown well! and since I saw a fine plant of it some years ago at Dangstein I have

not seen so good a one as here. Now Mr. Speed has ascertained three things with regard to it—first, that the tank should be placed close to the north wall of the house; second, that the plant should be potted deep; and third, that it should be sprinkled every day. Under these conditions it thrives wonderfully well. One of the most attractive places in the grounds was a long glass corridor, on the back wall of which were trained many fine climbing plants, such as *Indigofera decora* with pretty lilac-coloured flowers, *Clematis Jackmanni*, *Rose Maréchal Niel*, *Lapageria rosea*, *Rhynchospermum jasminoides*, *Cantua dependens*; and here also was a fine plant of the old *Fuchsia microphylla*, so seldom seen, and so very pretty. In the centre is a grand plant of *Camellia reticulata*, and another fine one of *Alba plena*. Adjoining the house stands the orangery, which on grand occasions is lighted up and forms a beautiful object. It is 100 feet in length, and filled with Orange trees 15 to 20 feet high, *Camellias*, tree Ferns, &c.

As the Victoria house was the model from whence arose the Crystal Palace, so doubtless the waterworks at Chatsworth suggested the grand display at Sydenham. Far up in the woods when the water is turned on, as it obligingly was by Mr. Speed when I was there, one sees it tumbling down a veritable cascade; as it comes further down it is made to go

\* From a photograph by Mr. Clarke, Photographer, Matlock Bath.

over a temple, which thus becomes a veritable water temple; then it rushes down a long and steep incline of stone steps, forming where it pours down it a swift and noisy rapid, and finally the *chef d'œuvre* of the grand fountain, throwing its jet far above the highest trees with which it is surrounded—a noble series of works, fit for such a residence.

It would be useless for me to proceed further. In every department—flower, vegetable, and fruit—I saw evidence of the highest skill and the use of almost unlimited wealth; and I can well understand the pride which such a gardener as Mr. Speed can take in the garden. Such a situation, however, has its drawbacks. Chatsworth is a show place, and this involves a constant succession of visitors, many of whom, caring not a doit for horticulture, think they must do the garden as well as the rest of the place; and many times, if they are people of position, must be accompanied by the head gardener. Now I do not believe any gardener grudges this when the visitors really care about a garden, but when they do not it is an insufferable nuisance. I hardly suppose that there are many railers at a “bloated aristocracy” amongst the readers of the Journal; if there are, it may be as well to mention that to allow the public to have the liberty they possess of going through the grounds and garden involves an expenditure of £2000 a-year.

Such were my impressions, faintly described, of Chatsworth. We see grand châteaux abound, large forests, and picturesque grounds, but nowhere can one find such gardens as are attached to many of the grand mansions so liberally dotted over our tight little island.—D., Deal.

### AVOIDING POTATO FAILURES.

It may probably be considered incorrect to assert that degeneration of the tubers of the Potato has not occurred, when the fact of its being subject to disease would imply degeneracy. There can be no doubt that the system of the modern Potato, under the influence of cultivation, has become far more susceptible than the plant was when first introduced from its native habitat, and it is for this reason that I consider careful selection and culture to be most advisable—not to cure the disease, but to combat and avoid its evils so far as may be.

Excessive moisture has all along been recognised as the primary cause of disease; and I believe I am correct in stating that the disease was not unknown to many persons before the ungenial season of 1845 brought it down in one fell swoop upon the entire crop throughout the country. But there is another evil that is much to be dreaded, arising from the effects of excessive moisture, and called supertuberation or second growth; for, while the blight may spoil part of a crop, supertuberation in its worst form will affect the whole so seriously as to render it totally unfit for table. Happily the cause of this second growth is no mystery. The hot dry weather of July frequently induces in the general Potato crop premature ripeness; when this occurs the growth of the tubers ceases and nothing will induce them to swell to a larger size. The rain that so frequently follows in August then causes supertuberation, accompanied by the growth of laterals upon the haulm. What can be done, then, to avoid such a combination of evils which at first sight appears likely to render all our care unavailing? We must be constantly on our guard in July, especially towards the end of the month; and if the foliage assumes a yellow tinge, however slight it may be, it is a sure token that growth—the legitimate growth of the season—has ceased, and that the crop is sufficiently ripe to be taken up. This is the grand opportunity, and those who are fully awake to its importance will not dally but lift and house the crop as quickly and carefully as possible. Then, when the early autumnal rain sets in, we gladly welcome it, rejoicing in the refreshing verdure of the pastures that have been parched by the summer sun, and in the quickened growth of Turnips, Celery, and other important crops, instead of complaining of the weather with our hands in our pockets, or writing melancholy accounts of the ravages of the blight, and the sad prospect before us when we shall have begun searching for the remains of the crop in September or October.

The fact of the antiquated notion that a crop of Potatoes will be spoiled if taken up before the haulm is either dead or very much decayed being still very prevalent, affords another remarkable example of the difficulty of impressing the agricultural mind with the necessity for improvement or advance. The beaten tracks and landmarks of our forefathers should be to us as a starting-point, whereon to base improvement, rather

than a dead weight to cripple our efforts and retard our progress. Let but the fact be clearly recognised and acted upon, that the only Potatoes worthy of cultivation for the general crop are those which may be lifted quickly after the tubers cease to swell, without suffering any deterioration of quality, and that we are really in possession of such kinds, and future losses from either blight or second growth will be so much reduced as to be comparatively trifling.—EDWARD LUCKHURST.

### NOTES FROM MY GARDEN, 1873.—No. 3.

THE earliest florists' flower with which I have to do is the Hyacinth; and as I had a good bloom last year, and was enabled to take the first prize in the only class I could exhibit in at South Kensington, I may be helping others, perhaps, if I detail my plans, inasmuch as I am obliged to combine economy with efficiency, and, having no forcing house, it is not an easy matter to get in good blooms by the time of the Show, March 18th.

It is usual, in giving directions for growing plants, to begin with the soil, but in the case of the Hyacinth there is something antecedent to that, and that is the bulb itself. No amount of care, skill, or expense will avail if you start with indifferent bulbs. If you wait until the season is advanced, and bulbs have been tossed about in shop windows, and have already exhausted some of their strength, it is hopeless to get a good spike; therefore it is well to be early in the field, and select, or have selected for you, good bulbs in due time. Size does not always indicate a good bulb; many bulbs never are large. A good weighty one, sound at the base, is what ought to be sought for, but the better way is, I believe, to leave it to the seller; tell him what bulbs you want, and for what purpose, and you will not be disappointed.

I grow generally about eighty bulbs, and the following were the chief sorts that I grew last year. It will be observed that they were nearly all single flowers, as these are the best for exhibition, giving larger and fuller spikes. I have marked with an asterisk (\*) those which gave me the finest trusses.

Of double varieties I grew

Duke of Wellington	Laurens Koster
*Noble par Mérite	Grootvorst
Bloksberg	*Prince of Waterloo
Koh-i-noor	Garrick
SINGLE REDS.	
Cosmos	La Propbète
*Norma	Howard
Princess Helena	*Lord Macaulay
La Dame du Lac	*Cavaignac
	Robert Steiger
	*Mrs. Beecher Stowe
	*Solferino
	Von Schiller
SINGLE BLUES.	
Couronne de Celle	*Grand Lilas
*Grande Vedette	*Argus
Charles Dickens	*Lord Palmerston
La Nuit	Prince Albert
	Grand Vainqueur
	*Baron Von Tuyl
	Mimosa
	Grondates
SINGLE LILAC OR MAUVE.	
Haydn	Unique
PURE WHITE.	
Grand Vainqueur	Grande Vedette
*Mont Blanc	*Paix de l'Europe
*Grandeur à Merveille	Grondates
Elfrida	Alba maxima
	*Madame Van der Hoop
	Queen of the Nether-
	Voltaire
	*Mirandoline
SINGLE YELLOW.	
Alida Jacoba	Anna Carolina
*Duc de Malakoff	*Ida
	Koning van Holland
	*Heroïne

In this selection I believe that most of our finest flowers will be found, and on looking through the list of winning flowers as shown by larger exhibitors I find that they are generally composed of such kinds. Now and then a few newer varieties are to be found, but it is not often that the new surpass the older sorts.

And now as to the method of culture adopted. At the end of October I made up a compost of half old rotten cow dung and half loam taken from the top spit of a meadow, and added a good portion of sand so as to keep it open. The pots used were 32's, one or two large pieces of broken pots placed at the bottom, and then the pot filled up with the compost; a hole was then made at the top of the mould large enough to place the bulb in, and a little sand put in it, and the bulb then planted. I have found this better than making the hole with the bulb itself, for they then sometimes push themselves out if any resistance is offered to the tender rootlets. I next placed a small pot reversed over the bulb, and on the hole of it put a piece of tile; the pots were then all placed together in a shady place, covered over with about a foot of leaves, and there left. This was for the purpose of promoting root-action before

the bulbs pushed. Ashes, or sand, or any material that will keep them dark will answer; but leaves were convenient to me, and, moreover, are light and easily managed. They were taken out of this about the end of December and transferred to a cool vinery, where, however, they were kept from frost. As I had not any forcing house I was compelled to adopt what is, I believe, a Dutch plan. I made up a small hotbed and placed the pots in it: they rapidly came on. I then transferred them to the top shelf of my greenhouse, giving them a plentiful supply of water all the time, and also giving them occasionally liquid manure. I have a small house in which I bloom my Auriculas, and to this all except those I took up to South Kensington were consigned, and I had a very beautiful bloom. Of course they were staked as they grew, so as to prevent the blooms from falling about. Those that I took to the Royal Horticultural Society won the first prize; so that I am justified, I think, in saying that in my little way I did very well. Those who do not wish to get them in flower so early need not trouble about the hotbed, but will have a good bloom at the end of March.—D., Deal.

### ORNAMENTAL BRICK.

THERE is a form of brick used here in constructing ornamental screenwork on the upper portion of walls which I think is worth bringing before the notice of your readers. It is capable of

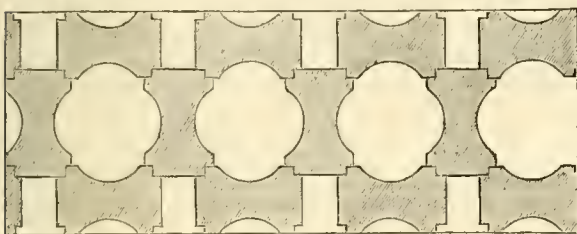


Fig. 1.

making various effects according as the bricks are combined. In the sketch I send you (*fig. 1*), the bottom layer is made by the bricks being laid horizontally, and the next tier perpendicularly, but another effect can be produced by placing all the bricks perpendicularly, while still another may be obtained by placing them all horizontally. In each case the effect produced is very good, and the frequency with which it is met with about Mentone testifies to the partiality the people have for it. The brick (see *fig. 2*) is 8 inches long,  $5\frac{1}{2}$  inches broad at the widest part, and  $2\frac{1}{2}$  inches in the middle. It may, I think, be advantageously introduced into this country, and made in ordinary brick earth or in terra cotta.—R., Mentone.

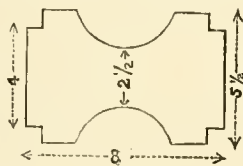


Fig. 2.

### NOTES ON VILLA AND SUBURBAN GARDENING.

**CUCUMBERS.**—As some may have dung sufficiently fermented to be made into a bed for the growth of these, I will offer a few remarks on the most simple method of management. Presuming we have a common frame, the first thing will be to excavate the ground where the bed is to be formed to the depth of 3 or 4 feet wider and longer than the frame to be used. In the centre place a layer of faggots or waste wood, 2 feet thick, of the size of the frame, and upon this foundation lay the fermented dung, taking care to make the mass firm as you proceed until the bed is 4 feet high in front and  $4\frac{1}{2}$  feet at the back. If the dung is not well fermented or dry it will be advisable to sprinkle it with tepid water as you proceed. The bed being formed, the frame must be placed upon it; and as soon as the mass begins to heat, the dung inside the frame should be forked over twice or thrice a-week until it is quite sweet—that is, until the steam evolved is inoffensive to the smell. At that time the frame must be lifted off, and the dung from the centre of the bed formed 6 or 8 inches wide all round the sides. On this wall place some boards 6 inches wide, so that their outer edges will be even with the outside of the frame, and then plaster the inside all round with mortar or tempered clay, which will prevent the entrance of steam and keep the woodlice out of a favourite retreat. Should the dung be very hot some strong pieces of wood may be placed across the bed, with some boards,

and then turf above them, on which the soil for the plants must be put. A hot-air chamber is thus formed between the dung and the soil, by which every part of the latter is at all times equally heated, and all risk of burning the roots is removed. The heat from this chamber may also be brought-in to warm the atmosphere of the frame in a case of emergency.

It is of little importance what kind of soil is used so long as it is not of an adhesive nature. Peat earth is good because it is porous, and its poorness is remedied on dung beds by the carbonic acid and ammoniacal gas from the fermented dung which pass through and enrich it; but I have found sandy turfy loam and leaf mould in about equal quantities used in a rough state superior to it. The soil should be placed in a narrow ridge along the back of the frame, not so as to rest against the woodwork; in this position it gets rather more sun, and the young plants have the advantage of the light reflected from the back of the frame.

In planting, place two plants under each sash, and within 8 inches of the glass; pinch the top from one of them as soon as it has made three rough leaves; train the laterals along the back of the frame, and stop them above every leaf until they show fruit. These plants will produce a few early fruit; but the others, which are to be trained towards the front, must not be allowed to bear fruit until they have acquired strength, as they must be depended upon for the main supply.

It is not necessary that the temperature of the frame should exceed  $65^{\circ}$  with air by night; but by day, with sun and air, it should range from  $70^{\circ}$  to  $85^{\circ}$  or  $90^{\circ}$ . Sprinkle the plants in the afternoon, about two o'clock, of every sunny day with tepid water, and shut the sashes close down, but give a little air at the time the frame is covered up for the night. Unless the weather is very bright, water at the root will not be required more than once a-week until the middle of March, but after that time the plants will stand in need of it more frequently. Keep the temperature steady at  $65^{\circ}$  by occasionally turning and renewing the linings. Do not allow the bed to become crowded with useless vines. Keep the glass clean, and success is certain.

If severe weather continues every available means must be adopted to protect Tulips, Auriculas, &c. We would, however, be perfectly understood that we do not advise smothering them. Air must be given to all plants in frames whenever opportunity occurs. Should the sun shine brightly after a severe frost keep the mats and coverings on, at the same time tilting the lights. It will be requisite to put small quantities of fresh bran under tiles in Auricula frames, the tiles being raised from the ground at the corners by small pebbles. On them the pots may be placed, so that no room may be lost by these most effective slugs-traps. As prevention is better than cure we would advise amateurs to clear their frames of such vermin by this simple plan. At this season mice are very apt to be very mischievous among Polyanthus when kept in frames, by eating the hearts of the plants. When the weather is sufficiently fine lose no time in planting Ranunculuses. These beautiful flowers delight in a cool subsoil. It will soon be time to put Carnations and Picotees in their blooming-pots. If a proper quantity of compost is not prepared lose no time in mixing it, at the same time keeping a vigilant look-out for all injurious insects, &c. Do not let a frosty day pass without giving it a turn-over, the trouble will be amply repaid by the excellent state of the soil.

The Chinese are very attentive to the house culture of many of the orchidaceous epiphytes, and thereby greatly increase the beauty and the fragrance of their apartments; they have them in ornamental vases and baskets, and even suspended in the air, where they last for many years and flower beautifully. Some of them continue in flower for many months, and diffuse the most delightful fragrance during the night. *Renanthera coccinea* is one of the finest of these.

The reason why the succulent and epiphytal plants answer so well for house culture is that their winter is one of drought and not of cold, and that the latter especially have little, and some of them no soil at the roots in their natural situations. But there has been hitherto a prejudice against, or at all events an ignorance of, and want of attention to the culture of succulent plants in this country. This is unwise, for many of them are exceedingly beautiful, highly fragrant, and better adapted for house culture than any plants whatever. They are singularly curious and varied in their structure, and generally speaking they require less light, air, and moisture than other plants.—W. KEANE.

### ECONOMY IN THE ARRANGEMENTS OF CUT FLOWERS.

A FEW words on this subject may not be altogether uninteresting to the readers of the "Gardener" at this season, when flowers are generally rather scarce. Like many more of my brother gardeners, I have often to study how to make the most of what I can gather together of all sorts. I have found a great saving of flowers by making hand-bouquets on light

wire frames, which I shall endeavour to describe, in hopes that it may benefit some one similarly placed with myself. These frames are very simple, easily and quickly made; for I feel as if I could make one quicker than describe how it is done. In the first place, make a hoop of any sort of thin, stiffish wire (I use small galvanised wire), about 4 or 5 inches in diameter. This done, get three pieces of the same sort of wire about 8 inches long, and with the pliers twist each into the shape of the accompanying figure. Make the length from *a* to *b* equal to half the diameter of your hoop. Now, by means of the little hooks at *a*, arrange the three pieces of wire at equal distances round the hoop, and press the hooks tight with the pliers, and it will be found that the three legs *c* will all meet at the centre of your hoop; and by tying those together with a piece of fine copper wire they form the handle of the frame. Before tying these together I generally add a fourth wire to stand straight up in the centre, about 1½ or 2 inches above the level of the hoop: this serves to keep the centre-piece of the bouquet in its proper place. Next, get a piece of common galvanised wire netting of a smallish mesh, and cut out a round piece of the size of the hoop of the frame; place it on the top of it, and fix in any convenient manner on the hoop or the three cross wires, keeping it slightly depressed in the centre, and the frame is complete.

Scarcity of flowers was not the first thing which made me think of this plan. The ladies for whom I am in the way of making bouquets for balls, &c., complained of my making them too "dumpy," and also too small. I could certainly remedy the latter complaint; but I found that the larger I made them they became the more disgusting in shape. They wanted them much flatter in shape than I could make them; and the flowers that I wasted in trying to accomplish that end were more than I liked to own. I made one of those frames, and to my great delight I found that I did not require more than half the flowers, and could at the same time make them large enough for anyone's taste, however extravagant, and as flat as a table, with as many modifications between that and a pyramid as fancy might choose.

And now, before going into the arrangement of the bouquet, a few words about the preparation of the materials. We will take the Camellia in the first place, as being the most prominent object at this season. I never cut a leaf or a leaf-bud with Camellias for hand-bouquets, knowing that those most forward buds are the most likely ones to produce a crop of flower buds next year; and on this principle I am always most willing to cut Camellias, because, instead of injuring the plants, which is the case if a couple of leaves are taken with the flower, the removal of the flowers soon after expanding concentrates the strength of the plant into those buds which produce next year's crop. For bouquets or the hair proceed as follows with Camellias: Take the bloom between the forefinger and thumb of the left hand, and with the other thrust a piece of copper or brass wire through the base of the flower, bending the two ends down to meet and be twisted together so as to form a stalk. If the flower is quite fresh this will be sufficient; but if the flower is old, and likely to fall to pieces if roughly shaken, put another wire through the flower crosswise to the other one, twisting all the wires together. If for the hair, a nice fresh leaf may be placed on one or other of the wires, to lie between the hair and the bloom. If for a bouquet, two leaves may be wired separately, and arranged at pleasure when making-up. Half-open buds may be wired in the same way, placing a leaf on the wire at the same time. Many other flowers require wiring as well as Camellias. If their stalks will admit of it, thrust a very small wire through them some distance above the base, and twist the ends round the stem to make the flower stand upright. If the stalks are too slender for this, the only way to do is to tie them to a small piece with very thin copper wire.

And now to the arrangement. Having the frame made, the flowers gathered, and those wired that require it, place the frame with the handle through the hole of an inverted flower pot, which is the most ready means of getting your hands at liberty in the course of making-up. Now get a handful of *Selaginella denticulata*, or dried dyed moss of the shops if none of this useful *Selaginella* is to be had; place this on the top of the frame, as nearly as possible in the position it has grown, keeping it higher and denser in the centre, or as near the shape of your intended bouquet as possible, leaving the loose ends hanging carelessly over the hoop. Take, say, a

white or red Camellia for a centre, and passing the wire down through the moss, tie it firmly to the wire sticking up in the centre, and then pull it gently down to the desired height, its outer petals resting on the green moss.

Next, proceed with the arrangement of flowers of a formal character, with due regard to colours, placing each flower or truss so as to stand out clear of its neighbours. The outside row should be placed so that one-half of the flowers extend over the hoop; but should not be so exact as if a compass had been used. The groundwork, as it were, having thus been formed, we next proceed to fill-up with flowers of a more graceful character, such as *Justicia coccinea* and *J. speciosa*, in single lateral spikes, single twigs of *Deutzia gracilis*, or *Spiraea japonica*, Rose buds, Snowdrops, Cyclamens, little twigs of Heaths and Epacris, or anything that is small and twiggy, to stand-up above the great body of colour, to give the whole a less formal appearance. These are placed in the widest spaces left between the other flowers, and all the lesser spaces are filled-up with small fronds of Ferns—*Adiantum* assimile being one of the most useful for this purpose. The bottom pinnae of Ferns used should be stripped off, for the purpose of getting them down through the moss. Having all thus filled-up, gather all the stems together, and tie them to the stem in the usual way, and then add a border of *Adiantum cuneatum* or *A. formosum*, and the bouquet is complete.

I venture to say that young ladies will find a bouquet made after this fashion will stand a good deal of "knocking about" on a ball-night without getting out of shape. The saving of time and material is something wonderful; so that the frame system has many advantages. I intended this paper to extend to table decorations as well; but I think it is unnecessary, as anyone who is scarce of flowers, with ordinary ingenuity will be able to apply these remarks to other purposes than hand-bouquet making.—R. INOLIS (in *The Gardener*).

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Dr. Hogg has been elected a Vice-President of this Institution in the place of the late Charles Lawson, Esq.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### KITCHEN GARDEN.

We have recently alluded to the remarkably fine weather for forwarding out-door operations; the wind has been veering round from east to north, and frost has set in, accompanied by fog, so that working out of doors amongst bushes and trees is very unpleasant. Before the ground became too hard some rough manure was spread over it, so that should the frost continue we shall be enabled to finish the trenching.

We had commenced to plant-out the *Sea-kale*, but the frost prevented our continuing the work. Our plan with this vegetable is to sow a few rows annually, and also to plant-out the best of the roots that have been used for forcing, and all the small roots that are not strong enough to be taken to the forcing house. The ground in which the *Sea-kale* is planted is trenched and moderately rich, and at the time of planting some coal ashes are placed round the roots.

We alluded last week to the early *Potatoes*, and it may not be out of place to draw attention to the general crop, as many of our readers may be desirous of purchasing sets. The experience obtained here in regard to the American sorts would lead us to the conclusion that they are not worth growing. American *Rose* does not throw much haulm, but it gave us only the most miserable apology for a crop, and the less said about the quality the better. Boston Red yielded enormously, but the *Potatoes* were of every conceivable shape; the produce had an earthy flavour and a waxy texture. Of Springfield White we had three years ago two or three small *Potatoes* that were cut-up into about a dozen sets, which produced about one hundredweight and a half of the most ugly specimens ever seen, and quite uneatable. Indeed, after several trials conclusive evidence was afforded that our soil was not suitable for the varieties introduced from America. There are some new sorts from that continent being introduced this year to the public. Most of them we have seen growing, and tasted after being cooked; they were well-shaped, of a good and distinct flavour from our English varieties, and the produce uniform in size. They have been accurately described by Mr. Barron in the "Proceedings of the Royal Horticultural Society."

The *Potatoes* that can be recommended for a general crop, and which should, if possible, be grown in the field, are Dalmahoy, one of the earliest and best of the Regent class, and Walker's Regent, which succeeds this and is rather more productive. For the latest crop Sutton's Red-skinned Flourball is as good as any, and its freedom from disease is an important point in its favour. This variety was obtained from Messrs. Sutton, of

Reading, when it was sent out for the first time, and has since then been annually grown at Loxford Hall by the acre, so that there has been ample opportunity to test it. Its freedom from disease is remarkable. This year a diseased tuber may be found here and there, but they are not worth notice when from one-half to two-thirds of the entire crop of Regents is diseased. It is considered a profitable investment to obtain a supply of seed Potatoes from Scotland annually.

Sow early *Turnips* on a warm border. The main crop of *Onions* may also be sown; White Spanish, Brown Globe, and James's Keeping are our selection.

#### FRUIT AND FORCING HOUSES.

**Pinerics.**—We shall, if possible, renew the Pine beds this week, and will make a trial of what is to us a new plunging material. It is difficult to obtain tan, and when this is used an anxious time follows in case the bed should become overheated, and thus destroy the roots of the plants. The only way to be safe is to stand the pots on the surface until the heat subsides to 90°, and when it declines to 85° this temperature can be maintained by the aid of the heating apparatus. It is not necessary that the bottom heat should rise above 85°, nor should it fall many degrees below it. We use cocoa-nut fibre refuse for plunging pots in cool houses, and out of doors this material, when fresh, throws out a gentle heat, and will probably, with the aid of the hot-water pipes, give out enough for the Pines; it is also a much better material in which to plunge pots, and there will be no danger from overheating. During the present severe weather, rather than overheat the pipes, let the night temperature fall to 65°; in mild weather it may be maintained at 70°. Utilise all the sun heat possible by shutting-up early in the afternoon.

**Melons** that were sown in the first week of January will now be ready to plant out. The compost should be prepared as recommended in a previous number, and taken into the house a few days before putting out the plants. The glass should be perfectly clean outside and inside of the house, and all internal woodwork should be washed with water in which a little soft soap has been dissolved. Coat the brickwork with limewash, and if a pound of sulphur be added to each pailful of the wash all the better.

**Cucumbers** are improving; the young leaves that are now forming are thicker in texture, and the growths are strong. A night temperature of 70° suits them best, while 65° is a good minimum for the Melon house.

**Orange House.**—Very few establishments have a house entirely devoted to the culture of the different varieties of dessert Oranges, and it is not generally known that fruit of the most delicious flavour, far superior to any imported, can be grown in England. The few trees we have are now in flower, and are growing in a house where the night temperature is about 60°. Tangerine, St. Michael's, and Maltese Blood are the most desirable sorts to grow. The fruit generally sets freely, but the atmosphere ought to be moderately dry when the blossoms are expanding.

**Fig trees** in pots are also starting into growth. It is well not to have the plants in a house with a high night temperature, and especially where there is not much circulation of air during the day, as such treatment causes a weak growth, and the fruit will probably drop off. Our trees are potted annually in October or November, and surface-dressed as soon as they are in active growth. It is best to have a house entirely devoted to their culture, and they should not be far removed from the glass. A temperature of 60° is quite high enough at night, and better let it fall a few degrees below this than rise above it in cold weather. The pots are not plunged with us, and the fruit is generally of excellent flavour. Shut the house up early in the afternoon, and syringe the plants at the same time. Figs luxuriate in the moist atmosphere produced by such management. Fig trees also require to be watered carefully. When in full growth they take a large supply, and if manure is added to it at each alternate watering so much the better; but if they receive an excess of water signs of distress will be soon apparent, deep green leaves will assume a yellowish green colour, and when this is the case no after-treatment will cause them to produce good fruit that season. Liberal drainage is essential in this as in the case of all trees or plants requiring a large supply of water.

#### STOVE AND GREENHOUSE.

No class of plants will better keep-up a supply of flowers at this season than the Orchid family. Take two species only—*Dendrobium nobile* and *Lycaste Skinneri*. Where in the whole range of exotic plants can two others be found that are so easily cultivated, and will at the same time continue to produce such a lavish profusion of beautiful flowers? The Chinese *Dendrobium* should be kept in stove heat when making its growth, but the plants during autumn and winter can be placed in a greenhouse or cool vinery, Peach house at rest, &c., and be removed to the stove when required. *Lycaste Skinneri* is a cool-house Orchid; also in the cool house, *Odontoglossum crispum* and *Ceoloyne cristata* furnish abundant supplies of the most lovely flowers. The atmosphere of the cool house should

only be moderately moist, otherwise the flowers are liable to spot. The temperature at present is 45° to 50° at night. The above Orchids are as easily grown as any other greenhouse plants; indeed, much more easily to the uninitiated than *Heaths* and many other Cape plants.

#### FLOWER GARDEN.

All the beds and borders planted with spring flowers should be free from weeds and have a neat and orderly appearance. Hyacinths, Tulips, and all other bulbous-rooted plants are through the ground; our beds were dressed over the surface with fresh soil, which improves the appearance and is beneficial to the plants. We are also busily engaged propagating and potting-off bedding plants. Owing to want of space we did not pot-off the Zonal *Pelargoniums* in autumn; now that the late vineries are cleared of Grapes, there will be plenty of accommodation for them. Pruning Roses, manuring and digging the beds. If herbaceous borders have not been lightly forked over this ought to be done at once, as many of the early-flowering plants are in a forward state.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

B. R. Davis, Middle Street, Yeovil.—*Catalogue of Vegetable, Flower, and Agricultural Seeds, &c.*

F. & A. Dickson & Sons, 106, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, &c.*

Butler & McCulloch, Covent Garden Market, London, W.C.—*Spring Catalogue of Seeds.*

Harrison & Sons, Royal Midland Seed Warehouse, Leicester.—*Seed Catalogue.*

#### TO CORRESPONDENTS.

\* \* \* We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

**BOOKS** (*C. Waghorn*).—"Kitchen Gardening for the Many" will suit you. You can have it free by post if you enclose five postage stamps with your full direction.

**PLUM SHOOTS** (*E. Walpole*).—The parasites are the Vine scale, *Coccus vitis* Brush over them with a creamy mixture of soft soap and spirit of turpentine.

**POTATO DISEASE** (*B. S.*).—We shall readily insert a detail of results in practice, but your theoretical conclusions seem to be refuted by the fact that tubers of the Potato imported from its native country produced diseased plants the first year.

**POULTRY DUNG** (*T. W. T.*).—In moderation it may be used for any crop. The addition of lime is no improvement. We should store it in layers, alternating with layers of earth.

**CARPET BEDS IN BATTERSEA PARK** (*W. M.*).—Your recollections of the bedding are too general to answer your question definitely. A groundwork of Feverfew, with *Alternanthera* filling-in the patterns, was most prevalent in the carpet beds last year. In a few instances both Gold and Silver-leaved *Geraniums* were used as a groundwork for *Coleus Verschaffelti* and *refulgens*. The colour of the latter *Coleus* resembles, and might be mistaken for *Perilla*. *Chamaepuce discantha* and *Alternanthera magnifica* as groundwork were also used, as were *Centauria candidissima* and *Iresine Lindenii*. There was no *Cineraria maritima* used last year. Feverfew, *Stachys lanata*, *Cerastium*, *Santolina*, and *Veronica incana* as hardy plants might answer your purpose. The only dark-leaved hardy plants that we know are *Ajuga reptans rubra* and the purple *Trefoil*, neither of which, we fear, would give satisfaction as summer carpet-bedding plants.

**PELARGONIUM BOWKERI**.—"J. S." wishes to know where he could find the true *Pelargonium Bowkeri* said to have a yellow flower?

**PINE APPLES** (*S. W. S.*).—For summer we should advise Queen, and for winter Black Jamaica and Smooth-leaved Cayenne. In your case we should prefer to plant-out in the bed instead of shifting into fruiting pots, and after the fruit is cut a sucker may be encouraged and left to the old stool, the old plant being cut away. Thus by top-dressing you may keep the bed furnished with plants for some years without the trouble of repotting, &c. Very nice fruit have been grown in this way, but our best cultivators produce their finest fruit on plants in pots.

**GRAVELLING CARRIAGE DRIVE** (*G. R.*).—We should remove as much of the old gravel as is reduced to a maddy state, have the walk picked-up as you propose, and the surface made regular. We should then put on a thickness of the rough building-stone chippings, which we fear are soft, putting them on so as to give the centre of the drive a rise of 7 inches above the sides, which should be 2 inches below the edge or grass verge. We should put on 2 inches of chippings that are so small as to have a neat appearance, and admit of the drive being cleaned, without giving it when raked a rough aspect, and making it necessary to remove the larger portions of stone repeatedly. The only matter we have a doubt about is the stone. If ordinary

freestone it will do only for the foundation; the surface should be of a hard material, as gravel 2 or 3 inches thick. If the stone is soft the drive will, after a season, be very little better than it is now, and it is well to consider whether it would not be cheaper to give a coating of gravel than expend time and labour on that which will not mend matters.

**WHITE AND DARK-FOLIAGED BEDDING PLANTS (T. W. J.).**—As you want plants that are between 1 and 1½ foot in height, our selection is confined to *Centaurea ragusina* (candissima), which in its improved form, *C. ragusina compacta*, is of dwarfier, more compact habit. It is increased by cuttings of the side shoots now, placed in a gentle heat. *Cineraria maritima* would suit, but the plants must be raised from cuttings, as these obtained from seed are not of good colour, and grow too strongly in the first year. The cuttings may be put in now or early in March in sandy soil in gentle heat. The best thing for associating with these is *Iresine Lindeni*, which is readily increased by cuttings in heat. The dark-leaved Beets, as *Dell's Crimson*, accord well with the *Centaurea* or *Cineraria*. The seed may be sown in boxes in a cold frame or very gentle heat early in April, and the seedlings pricked-off, when the rough or second leaves appear, about an inch apart in boxes, shading for a few days, and when established admit air and light freely, and plant in May. You may instead sow in the second or third week of April where the plants are to remain.

**SELECT GLADIOLI (D. R.).**—You will find all the information you require in "The Gladioli; its History, Cultivation, and Exhibition," by our contributor "D. Deal," published by L. Reeve & Co., Henrietta Street, Covent Garden. 1s. We subjoin a list of the best twenty-four:—*Adolphe Brongniart*, *Deliastum*, *Beatrix*, *Eugene Scribe*, *Eurydice*, *Herace Vernet*, *Jupiter*, *Legonvé*, *Madame Furtado*, *Madame Desperies*, *Marie Stuart*, *Meyerbeer*, *Michel Ange*, *Norma*, *Orpheus*, *Phobos*, *Primatices*, *Schiller*, *Sir J. Franklin*, *Ulysses*, *Virgile*, *Princess Mary of Cambridge*, *Virginialis*, and *Mrs. F. Whitbourn*.

**CHARCOAL FOR PLANTS (Wife and Mother).**—Any kind of charcoal will do to use as drainage or mix with the soil for potted plants. About the hive next week.

**CINERARIA LEAVES CURLING (S. B.).**—If the edges curl towards the inner surface it is their natural mode of growth.

**BURNT CLAY AS A TOP-DRESSING (A. Scott).**—It will be beneficial to a grass field, of which the soil is of a retentive character. It is best to apply it new.

**HAMILTON'S SYSTEM OF PINE CULTURE (H. E.).**—His book was published thirty years since, and is probably out of print. The following is his mode of culture:—Suckers taken off in October or November, plant into pots from 5½ to 6½ inches diameter at the top, and plunge overhead in the tan; this causes them to strike root in a very short time. In this state let them remain without any water, except occasionally sprinkling them with the syringe, and this, in the winter season, only in the early part of the day. In March transplant into pots from 7 to 8 inches at the top; and at this shifting plunge up to their rims in a heat of about 85° or even 90° for a week or two after potting, to accelerate their striking root into the fresh soil. As soon as plunged sprinkle them over their leaves with water 2° or 3° warmer than the atmosphere in the house; and this mode of watering ought to be repeated twice a day in the summer season, except in very cloudy weather, when steaming the house will be found to keep the atmosphere and the plants sufficiently moist; but as the season advances only water the plants over their leaves in the evening, at the time of closing the house, whilst the sun is still shining on the glass, and before its rays are much diminished. As soon as the heat rises in the tan give a good watering at their roots at this season, to settle the soil about them, but after this watering the soil ought to be kept sufficiently moist by watering the plants all over their leaves, every evening, after sunny days. About the latter end of May again shift into larger pots, but at every one of these shifting the bed must be replenished with fresh fermenting materials, as a brisk bottom heat is of the greatest importance for two or three weeks after the plants have been fresh potted. If there is much sun at the time shade the plants rather than give much air for a week or two after potting, but at all other periods they ought to have plenty of air. The size of the pots at this shifting ought to be from 9 to 10 inches diameter at the top. The plants are every way treated as before, well watered over their leaves after bright sunny days, also plenty of water thrown on the pathways, or on the flues, pipes, &c. If the plants are intended to be turned-out into the tan in the autumn they may thus remain until the bed is ready for them, but if they are to be fruited in pots the following season they ought to have their last shift early in August. The size of the pots required will be from 11 to 12 inches diameter at the top, and in order to grow the Queen varieties, as well as the *Enville*, to a large size they ought to have their last shift ten or twelve months previously to fruiting. In the fruiting stove he recommends the maximum heat of the house in November, December, and January, by artificial means not to exceed 65°, the minimum 55°. In spring and autumn, if fruit are to be swelled, maximum by sunshine 80°, minimum 68°, medium by artificial heat 70°. In the summer the maximum, under the effect of strong sunshine, may rise to 90°, and may be allowed to drop as low as 70° in the morning. In very bright sunny weather, Mr. Hamilton says, the plants in fruit had better be shaded than have admitted to them too much air at any time of the day. From this recommendation of shading we entirely dissent, considering it to be one of the most incorrect practices in modern Pine culture. In this country, where we have so much gloomy weather and consequent deficiency of light, there is never such an excess for any plant that is a native of the tropics as to render necessary shade when it is established, or its fruit swelling. It is a recommendation not in accordance with the dictates of nature, though such a recommendation was very necessary in those bygone days when Pine plants were cultivated almost without roots. We condemn the shading system altogether for plants of any age which are established with roots. Applied to fruit or fruiting plants it must certainly occasion a considerable sacrifice of their best qualities. A far more correct principle is, instead of shading, to secure in fervid weather a genial humidity to the interior atmosphere. By this method the plants will always maintain a dark, healthy green, have stems stout and well rooted, with leaves short in proportion, wide and fleshy, and well able to show and swell-off fruit of the first quality. In order to swell their fruit to a large size no air ought to be given until the thermometer reaches 80° or 85°, which will generally reach that point in the morning by nine or half-past. To keep it down to this give it the benefit of air until half-past ten, then close the house and water them over their leaves, thus let them remain until half-past two or three in the afternoon, letting them have all the benefit of light and sun. At half-past four close the house, syringing again over the leaves of the plants, which will keep them moist during the whole of the night. Newly-potted plants will be benefited by a heat of about 90° for two or three weeks, after which time it may fall to 85° maximum and 80° minimum, but in the winter

75° will be sufficient. The bottom heat required for those plants which are to produce several fruit from the same plant ought to be as equable as possible, at a medium of about 80°; and not to fluctuate more than 3° above or below; however, a plant will swell well in summer in a bottom heat of 70°, but in winter, when the superincumbent atmosphere is kept cooler, the plants that are swelling their fruit will make little progress except the bottom heat be about 75°.

**INSECTS (A Subscriber's Sister, Co. Cork).**—As well as we can judge from the shattered and rubbed state of the specimen sent by you, it was the female of the pale Tussock Moth, *Dasychira pudibunda*, a rather common species. —I. O. W.

**NAMES OF FRUITS (W. Atkinson).**—We do not recognise either of the specimens. Are they not local seedlings?

**NAMES OF PLANTS (A. D. Ramsey).**—*Ruscus Hypoglossum*, or double-leaved Butcher's Broom.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### EXHIBITED BIRDS MUTILATED—HAMBURGS.

I AM sorry to find that the mischievous race of tail-pullers is not yet extinct. I sent a Black Hamburg cockerel to the late Bristol Show, where he won the first prize, and returned minus both sickle feathers. He is thus rendered useless for exhibition purposes for the rest of the season. Of course, I cannot say positively that the mischief was done at the Bristol Show, but I think you will agree that the following facts have a very suspicious look.

In 1870 I won the first prize with a Black Hamburg cock at this Show, and the bird returned home with one sickle feather the less. In 1871 I only won the second prize, and so, I suppose, escaped scot free. In 1872 I won both first and second prizes, and when the two cocks returned home I found that a sickle feather had been drawn from each. In 1873 I was third only, and, I suppose, the cockerel was not considered worth meddling with, for he was returned unharmed. This year I have again won the first prize, and the sequel I have already mentioned—viz., both sickle feathers are taken. It seems to me that it will be only prudent to steer clear of the Bristol Show in future, lest my friend, whoever he may be, should take a fancy next time to the whole bird.

I see "WILTSHIRE RECTOR" complains of want of support from the Hamburg breeders, but I think the reason is not far to seek. It is a long, tedious, and expensive journey from Lancashire, the Hamburg head-quarters, to Bristol, and as long as the Bristol Committee offer only a £2 prize, and charge 7s. 6d. entry, it is not to be wondered that the north-country breeders should prefer to keep their birds for the shows nearer home, where they can win a £2 prize for a 5s. entry fee. It may be said that there is a Hamburg cup offered, but I do not think that a fifth chance of a cup is much inducement. I do not, however, speak from any personal feeling in this matter. I have always supported the Bristol Show, and I shall be sorry to have to give it up.—W. SERJEANTSON, *Acton Burnell, Rectory*.

P.S.—Since writing to you I have learnt from a friend, Mr. Kilvert, Palms Hill, Wem, who also exhibited some Black Hamburgs at the late Bristol Show, that his cockerel came home in the same plight as mine—viz., with both sickle feathers missing. This makes it still more improbable, I might say impossible, that all this mischief could have been done by accident.—W. S.

### NOTES FROM THE YARD.

As I think my poultry book would compare favourably with many others, I will state a few facts from it.

Last month the produce of two yards, one containing a Dorking cock and seventeen mixed hens, and the other a Brahma Pouter cock with five hens, was 217 eggs, against 252 laid by the same number last year. Now I think this very good, especially as it is said to be a bad laying season. The Brahmas were laying from November, and although none have yet been made use of, there have been several broody hens. The largest yard have the run of a large field and a long run beside; the others are in a small yard. We feed on whole corn in the morning, and ground oats slaked with milk or water. Last year we had from twenty-four hens and two cocks 1866 eggs, and never wanted for new-laid eggs. We reared a number of chickens. In my next I will say something as to the different breeds.—CULTOR.

### CROWING HEN PRODUCTIVE.

I SEE by your answer to "SPANISH COCK'S" inquiry concerning a crowing hen that it is useless to keep her, as she will never lay. I have a White Dorking hen that crows; she always answers the cock in the morning, and is the best layer out of five. She has laid twenty-six eggs since the 21st of last December to the 1st of the present month inclusive, and she has not left off yet. She is a good siter and mother as well. Her age is from four to five years; she has always crowed since I have had her. I

received the same advice, but would not act upon it, and she has well repaid me during the last two years.—G. MOSELEY, 8, *Rose Cottages, Alpha Road, Surbiton Hill.*

### HITCHIN POULTRY SHOW.

WE were very sorry to find that the liberal prize list offered at this Show did not attract a more liberal entry. It would have been better to have thrown the classes open to all ages, as at this season chickens can compete quite fairly with old birds; but even then we fear it is too late for such a liberal prize list to meet a fair return from exhibitors. The attendance of the public was also very small, as might, perhaps, be expected; the place having little population of its own, and being just too far from London and other towns to attract many visitors.

The quality of nearly all the classes was very high, and the 260 pens of poultry were, almost without exception, shown in single tier, with the Pigeons on the top, an arrangement which made the inspection and judging of the pleasantest description. The Exhibition was held in the Corn Exchange, a fine sky-lighted building, the only fault of which was that on such a day as last Thursday it was somewhat cold. The pens were all well littered with clean chaff, and it gives us pleasure to state that at no show this season have we seen the birds better or more carefully attended to, the whole management reflecting the greatest credit on all concerned, and forming a curiously strong contrast to a recent notorious *fiasco*. It is much to be hoped that so excellent and thoroughly straightforward an enterprise may be enabled, in spite of the present disappointing results, to occupy another time a better position, and become one of the recognised fixtures of the year.

Both classes of *Dorkings* were very good and very small, the Silver-Grey cup and second being each taken by excellent and well-known birds; and the cup pen of Coloured birds being of such grand size and quality that more than one good judge thought them the best pen in the Show. We have rarely seen better birds, especially in chicken classes. *Cochins* were not so good, neither Bufts nor other colours being at all up to the mark, and the two classes only numbering eighteen entries between them. Judging, also, was far from easy, there not being one thoroughly good pen in either class. The cup pen contained a very good cock, but not a good hen. *Brahmas* were excellent, particularly the Dark; but in this class we thought the judging at fault, much the best pair being the third-prize, both cockerel and pullet in which were all but perfect; while in the cup and second-prize pens the pullets were only fairly good, and both cockerels were a dirty yellow, coarse in comb, bad in figure, and with immense ill-shaped tails. The next best pen in our opinion was fourth; it contained a beautiful pullet and a very handsome though small cockerel, which won the third prize at the Palace, and had, at least, symmetry to recommend him. There were also most excellent birds in Mrs. Baillie Hamilton's and the Rev. J. Richardson's pens. In Lights the cup was won by Mr. Dean's beautiful Birmingham cockerel, tolerably well mated, and which is certainly the best bird of the season. The other prize pens were fair average birds, and Mr. Haines's pen contained, we believe, the Palace winner, but so badly mated as to throw him out, though the cockerel was certainly, next to Mr. Dean's, the best in the class. *French Fowls* were good, as will be seen from the prize list; Houdans being specially noticeable for bringing again well to the front the old name of Mr. O. Quibell. In *Crève-Coeurs* we confess we would have liked to make-up a pair by taking one bird from Mr. Wood's pen and one from Mr. Dring's.

Passing to the smaller birds, *Game* were fairly good classes, but many of the birds rather past their best condition. In *Spanish* there were but half a dozen pens, and we noticed that the combs of nearly all the cocks were going black with the cold. The winning pen contained a capital cockerel and one of the best pullets we have seen for two years, being very smooth and large in face with a capital deaf ear. *Spangled Hamburgs* "brought in" one of the genuine old "Lancashire" breeders with a capital pen, Mr. Beldon having to go second. The Pencilled class we did not think quite so good, and are not sure we should not have preferred the second-prize to the first; but at the time of our visit the first-prize cock was evidently going rather out of order from the cold. In Any other variety the winners were a really grand pen of Golden Polish. The Selling class contained several good pens, which we observed were "sold" in nearly every case. We especially noted a highly-commended pen of Buff *Cochins*, the pullet in which would not be dear at £5. The Local class brought out Mr. Shrimpton's grand Partridge cock, which, in all essential points, is the best *Cochin* of the season, though certainly too dark in colour. *Game Bantams* were good—excellent good; and compared with others, were quite a strong class, numbering twenty-one pens. We did not think the winning pen well selected. Any other variety only contained a dozen pens, the first prize going to a good pair of *Sebrights*.

All the classes of *Ducks*, though not large, were far beyond

the average of a country show. The winners in Aylesbury and Rouens were fit for any competition. In Black East Indians Mr. Sainsbury took the honours with rather badly-matched but exquisitely-coloured birds. In Any other variety Mr. Leno won first with Mandarins, and second with his Carolinas. There was also in the class a pair of the now-seldom-seen White Call Ducks.

*Pigeons* were remarkably good, and compared with the prize list in much greater comparative force. We are not sure that we should endorse the pens selected for the honours in Turbitts and Jacobins, but only had time for a very hasty examination of this department of the Show.

**DORKINGS.**—Silver-Grey.—1 and Cup, O. E. Cresswell, Early Wood, Bagshot, 2, L. Wren, Lowestoft. 2, W. H. Denison, Woburn Sands, Coloured.—1 and Cup, F. Parlett, Great Baddow. 2, Rev. J. G. A. Baker, Biggleswade. 3, R. Cheesman, Westwell, Kent. *hc*, J. Watts, King's Heath, Birmingham.

**COCHIN-CHINA.**—Buff or Cinnamon.—1, Capt. T. S. Robin, Petit Ménage, Jersey. 2, J. Watts. *hc*, W. A. Burnell. Any other colour.—1 and Cup, W. A. Burnell. 2, H. Beldon, Giltstock, Bingley. *hc*, Mrs. E. Pryor, Welwyn; J. K. Fowler, Aylesbury; T. M. Derry, Gedgey.

**BRAMA FOOTA Dark.**—1, Cup and 2, Horace Lingwood, Creeting. 3, L. Wright, Crouch End, Harnsey. 4, W. Mansfield, Cambridge. *vhc*, Hon. Mrs. A. B. Hamilton, Woburn. *hc*, Dr. J. Holmes, Chesterfield; Hon. Mrs. A. B. Hamilton; Rev. J. Richardson, Sandy; Rev. J. D. Peake, Laleham Vicarage; E. Pritchard, Tettenhall. *c*, P. Unsworth, Lowton, Newton-le-Willows. Light.—1 and Cup, T. A. Dean, Marden, Hereford. 2 and *c*, Capt. W. Saville, Wye. 3, J. Long, Bromley Common. 4, H. M. Maynard, Holmeow, Isle of Wight. *hc*, P. Haines, Palgrave, Diss.

**SPANGLED HAMBURGS.**—1 and Cup, R. B. Wood, Uttoxeter. 2, W. Dring, Faversham. 3, Mrs. Mortimer, Radhall, Ross. *vhc*, R. B. Wood (2); H. Feast. *hc*, J. J. Malden, Biggleswade.

**HOUDANS.**—1 and 2, W. O. Quibell, Newark. 3, W. Coppelston, Lostwithiel. *hc*, W. Dring; R. B. Wood; Mrs. Vallance, Sittingbourne; W. O. Quibell. *c*, A. C. Bryant.

**GAME.**—Black-breasted Red.—1, R. Hall, Cambridge. 2, S. Field, Bicester. 3, J. Mason, Gloucester. Any other variety.—1 and 2, R. Hall. 3, H. E. Martin, St. Albans. *hc*, E. W. Leigh.

**SPANISH.**—1, F. James, Peckham Rye. 2, S. W. Hallam, Whitwick, Leicester. 3, J. S. Dew, Gamlingay Mills.

**HAMEBURGS.**—Gold or Silver-spangled.—1, N. Marlor, Denton. 2 and 3, H. Beldon. *vhc*, M. M. Cashmore, Sheepshed, Loughborough. *hc*, W. K. Tickner, Ipswich; Rev. R. G. Green, Amphil. Gold or Silver-pencilled.—1 and 3, H. Beldon. 2, J. Walker, Birstwith, Ripley. *hc*, W. Speakman, Nantwich.

**ANY OTHER VARIETY.**—1, T. Deane, Golden Poles. 2, Rev. N. J. Ridley, Newbury (Male). *hc*, J. Hinton, Warminster (Silver Poland); R. Rooth, Chesterfield (Male); S. P. Broad (White Silks); J. K. Fowler; J. Walker (Black Hamburgs).

**SELLING CLASS.**—1, W. Mansfield (Dark Brahma). 2, Mrs. T. Penonby, Goldington Bury, Bedford. 3, M. Leno, Markyate Street (Light Brahma). *hc*, D. Young, Leamington (Buff *Cochin*). R. Cheesman (Coloured *Dorking*); J. K. Fowler (White *Cochin*); T. M. Derry (Partridge *Cochin*); H. Beldon. *c*, Rev. N. J. Ridley (Male).

**LOCAL CLASS.**—Any variety.—Open to amateurs resident in Hertfordshire and Bedfordshire.—1 and 4, B. H. Shrimpton, Leighton Buzzard (*Cochin*). 2, G. Crick, Stopealey, Luton (*Cochin*). 3, S. Lucas, Hitchin (Light Brahma). *vhc*, G. Oakley, Luton (Partridge *Cochin*). *hc*, H. Ford, Ridgmont, Woburn (Dark Brahma); G. Spencer, Stotford (Crève-Cœur); G. E. Porter, Sandy (Partridge *Cochin*); Rev. C. G. Ewbank, Biggleswade. *c*, Rev. J. G. A. Baker (Coloured *Dorking*); Mrs. E. Fryer (Partridge *Cochin*). *hc*, W. F. Entwistle, Westfield, Bradford. *hc*, E. P. Pym, Cardiff; T. Randall, jun., Guildford; R. Kemp, Holloway Road, London; G. Lucas, Hitchin; J. Eaton. Any other variety.—1, M. Leno. 2, C. Reed. 3, J. Mayo. *vhc*, W. H. Shackleton, Bradford. *hc*, T. E. Thistle, Lowestoft; G. Oakley.

**DUCKS.**—Aylesbury.—1 and 2, J. K. Fowler. Rouen.—1 and Cup, F. Parlett. 2, T. J. Upsher. 3, J. K. Fowler. *hc*, T. J. Upsher. 4, K. Fowler. Black East Indian.—1, Cup, and 3, G. S. Sainsbury, Bevis. 2, J. W. Kellaway, Merston, Isle of Wight. *hc*, G. Oakley. Any other variety.—1 and 2, M. Leno (Fancy). *hc*, E. K. Fordham, Ashwell; J. Watts; W. Boucher, Notting Hill (Mandarins).

### PIGEONS.

**POUTERS.**—Cocks.—1, N. Hill, Ealing. 2 and 3, R. Fulton, New Cross. Hens.—1, R. Fulton. 2, N. Hill. 3, W. Nottage, Northampton.

**CARRIERS.**—Cocks.—1, Cup, and *hc*, R. Fulton, Hereford. 2, E. Walker. 3, P. R. Spencer, Hereford. *c*, W. E. Nalder, St. John's Street Road, London. Hens.—1, R. Fulton. 2 and 3, E. Walker. *hc*, W. E. Nalder; P. R. Spencer; R. Fulton. *c*, W. E. Nalder.

**BANTAMS.**—1 and 2, R. Fulton. 3, H. M. Maynard. *hc*, H. Yardley, Birmingham. *c*, J. W. P. James, Hereford; P. R. Spencer.

**TIMELEAS.**—1 and Cup, H. Yardley. 2, J. Ford, Monkwell Street, London. 3, R. Fulton. *hc*, J. Ford; R. Fulton.

**OWLS.**—1 and 2, R. Fulton. 3, W. Whitaker, Henlow. *c*, H. W. Webb.

**TURBITTS.**—1, S. Salter, Egrove. 2 and *hc*, R. Fulton. 3, O. E. Cresswell.

**ANTWERPS.**—Homing.—1 and 2, Capt. G. Edwards, Hyde Lodge, Hammer-smith Mill. 3, J. Sparrow & Cotton, Grosvenor Mews, London. *hc*, J. W. P. James; P. Lobbeck; J. Bazzard, Bedford. *c*, J. Mantel, Newport Pagnell; J. Sparrow & Cotton, Grosvenor Mews, London (2).

**JACOBIENS.**—1, J. Thompson, Bingley. 2, O. E. Cresswell. 3, G. Hardy, Goldhawk Road, Shepherd's Bush. *c*, G. Hardy; J. Thompson (2).

**FANTAILS.**—1 and Cup, H. M. Maynard. 2, J. S. Loversidge, Newark. 3, H. Yardley. *hc*, J. S. Loversidge; P. R. Spencer.

**ANY OTHER VARIETY.**—1, R. Fulton. 2, H. Yardley. 3, J. S. Price, Potter's Bar. *hc*, P. R. Spencer. *c*, G. Hardy; A. J. Barnes, Gloucester (Black Magpies); J. S. Price (2).

**DRAGONS.**—Red or Yellow.—1 and 2, S. C. Betty, Park Street, Regent's Park, London. *vhc*, W. H. Mitchell. *hc*, W. Hill, Handforth (4). Blue and Silver.—1, 2, and *hc*, W. Hill. *c*, W. H. Mitchell; J. G. Dunn, Newcastle-on-Tyne; W. Hill. White.—1 and 2, W. Bishop, Dorchester. *hc*, W. H. Mitchell, Moseley, Birmingham; W. Hill.

**JUDGES.**—Poultry: Mr. R. Teebay. Pigeons: Mr. F. Gresham; Mr. P. H. Jones.

### FAKENHAM POULTRY SHOW.

(From our Usual Reporter.)

THIS year the entries, the quality of the birds, and more especially the improvement in the quality of the county birds, proved that the exertions of the energetic Committee were not expended in vain; for while the entries were large as compared with the past, and the arrangements and management better, yet the great point observable was the superiority of the stock shown by the local exhibitors, which in some instances exceeded anything shown in the same classes by exhibitors from a distance, very few pens passing unnoticed in any section.

Of *Dorking* cocks of the coloured variety, a grand broad and deep cockerel was awarded the first prize and county cup for the section of the large varieties. The second and third prizes went to large adult birds. In hens, which as a class were superior to the cocks, a grand hen stood first, the rest also being very good. In other colours of cocks the birds were only of ordinary merit, but the hens were such as are rarely seen, the cup for the *Dorking* section falling to the first-prize Silver. *Cochin* cocks made a capital class, the winners being Buffs, a veteran bird carrying-off the cup, closely pressed, however, by a most exquisite White hen belonging to the same exhibitor; in the latter class a capital Buff somewhat out of condition was second. Class 6, for other coloured *Cochin* cocks, contained good White and Partridge birds. *Brahma* cocks (Dark), were a large but not good class, although some of the birds were good in shape and sound in colour. Hens were also numerous, and the winners very fine, the cup being awarded to Mr. Lingwood's fine hen. Light *Brahma* cocks exhibited a great improvement in colour and marking; the hens also being a fair lot. *Game* were one of the finest sections, and the local celebrities had a number of well-shown birds; one Brown Red cockerel won both the open and county cup. The rest in this class were of fair quality. Black Red cocks were good in style and colour, but the first-prize cockerel was minus one toe nail, and the second was a cock without a spur. This variety is sadly neglected, although among the most beautiful of *Game*. Red hens were very good; the winners were all Brown Reds, not one good Black Red being shown. Cocks, any other variety, comprised some good coloured Duckwings, notably that which was first, the second being of high quality and colour, but they were not in the best feather. In hens an almost perfect Pile pullet was first, and a Duckwing hen second. *Hamburgs* were not numerous; in fact, there was not one entry of Silver-pencilled. The Gold-spangled were very good, especially the cup pen. Gold-pencilled were poor, while the Silver-spangled and Blacks were good. Of *Malays* there was a grand display, old and young being shown in one class. They were all Reds, except one pair of Whites to which the first prize and cup were awarded. Second came a stylish pair of Dark Red chickens. Most of the lighter colour were white in tail and red on the margin of the breasts. The *Spanish* winners were good, but the rest poor, and *French Fowls* were only of moderate quality. There were two Selling classes containing eighty-four birds, many of which were of the highest quality considering the restricted prices.

Red *Game Bantams* were poor, except about half a dozen birds, comprising the winners and one Brown Red cockerel shown by Mr. Pearson, of Wymondham. Other kinds of *Game Bantams* were Piles first and Bantam cup, and the second-prize Duckwings. In the Variety class of Bantams were many good pens, and the prizes were awarded in duplicate.

*Ducks*, *Aylesbury* or *Rouen*, were only of moderate quality, but the other varieties were good.

*Turkeys* and *Geese* were large and well shown, and mostly county birds.

*Rabbits* were next on the list, the Lop-ears showing high quality. The cup went to a grand Tortoiseshell doe; second came a Blue-and-white, and an excellent Sooty Fawn was very highly commended. Rabbits of any other variety were—first Silver-Grey, second Dutch, and third Himalayan.

The list for *Pigeons* was somewhat limited, but there were some good birds. Carriers were only moderately good, but there were some very good Pouters, both winners being White, and the cup for the first three classes was awarded to the former. Barbs were only young, and not well developed. In Tumblers, Bald, the first were very pretty Blue Short-faces, and the second a very clean-cut high-coloured pair of Black Long-faces. Some capital pens received high commendations. In Beards the winners were small and neat, and the first-prize birds took the cup for this section. Tumblers, any other kind, were Almonds of high quality in both head and feather points. Fantails were good, but mostly quite crushed in feather, a fault not easily surmounted with birds often in the basket and show pen. Dragons were a good class; a Blue cock was first, and a Red second. Antwerps were not numerous; the first was a Silver Dun Short-face, second a Long-faced Blue Chequer. The Any other variety class contained nothing striking, but in the Selling class were some good birds.

*Canaries* were not numerous, but there were birds fit for any competition, the prizes going generally to the new Derby tone of colour.

The only drawback to the progress of the shows in the counties of Norfolk and Suffolk is the excessive railway charges, but with a proper representation made by the combined societies this difficulty would no doubt be easily got over. The awards were published last week.

### PEKIN DUCKS.

THESE Ducks elicited so many inquiries at the late exhibition of the Connecticut State Poultry Society, that all poultry fanciers and farmers who have good facilities for raising waterfowl will

be interested to know something more about their good qualities and history. They were brought to this country from Peking by Mr. James E. Palmer, of Storington, and landed in New York on the 14th day of March, 1873. Quite a large number were put on board the ship, but most of them died during the passage. Mr. Palmer succeeded in getting one drake and three Ducks to his farm alive, but, of course, dwarfed by the long voyage. His attention was first called to them in China by their large size. He at first supposed they were a small breed of Geese. They recovered their flesh sooner than he expected, and before he had suspected them of laying he found a lot of their eggs in a small brook running through the pasture where they were confined. The Ducks laid constantly until the last of July, something over one hundred eggs each. Some of the eggs were sold, given away to friends, and set under hens. About fifty birds were raised. The eggs hatch in twenty-five days, and the young birds are about one-third larger than the Rouens when they first come out of the shell, and they grow more rapidly through the season. Mr. Palmer's largest pair at the Exhibition, only five months old weighed 15 lbs. without any fattening or special preparation.

They are clear white, with a yellowish tinge to the under part of the feathers, which are very thick and downy. The wing primaries, and all of the flight feathers are remarkably short, showing that they have long been domesticated, and are not disposed to fly much. They are very hardy, not minding snow or rain, are easily kept in small enclosures, and only require a little clean water and regular feeding to raise them successfully. Where they have a good run they are excellent foragers, and will take care of themselves as readily as any other breed of Ducks. They have large yellow bills and reddish legs. Their long graceful necks, their white plumage and remarkable size, make them pleasing objects upon the water or about the farmyard and lawn.

They have excited a great deal of interest among all poultry fanciers who have seen them at Mr. Palmer's farm, and were the leading feature of the State Exhibition.

The *Hartford Courant*, in its notice of the Show, says: "The most interesting event of the Show, and of the year in poultry matters, is the importation, by Mr. J. E. Palmer, of a new variety of Ducks, previously unknown in England or America. They are as much larger than the common kind of Ducks as the *Cochins* or *Brahmas* are larger than ordinary fowls."

A pair of the old birds, and four pairs of their offspring, were on exhibition. The importance of this new acquisition to our list of waterfowl will be felt by all farmers as well as fanciers. If they do for our Ducks what the Asiatics have done for our hens, it will indeed be a great acquisition for the whole country. —W. CLIFT, *Mystic Bridge, Connecticut.*—(Canada Farmer.)

### POLYGAMY IN PIGEONS.

I REMEMBER reading in your pages some few months since a correspondence on the above subject between "R. W." and "WILTSHIRE RECTOR," and as additional information, beg to send the following.

I have at the present time one Blue Fantail cock paired to two hens—viz., a Blue Fan and a Turbit hen; both hens have eggs, two each, laid in the same nest, or perhaps it would be more exact to say in one nest compartment, the nest-pans having been removed. This is the second time the same three birds have been in the same circumstances. The previous time they did not hatch, though, I believe, entirely owing to one of the birds being away several times at exhibitions, otherwise, I have not the slightest doubt, they would, as I have never seen the nest without two birds sitting, though I have also noticed that the cock bird will sit at different times on each or either pair of eggs, whichever may be vacated.

The Blue Fan cock was first paired to the Blue Fan hen, but requiring her to show, her faithless mate during her absence "took a fly with another," and the poor Blue hen came back to find her nest occupied by another. As you may imagine matters were lively for a short time, but now the hens sit side by side quite peacefully. Should the reverend gentleman doubt the accuracy of my observations, I can only add—*ONUS PROBANDI*.

### RABBIT FEEDING.

FIRST, as to times of feeding. Some English fanciers advocate feeding three times a day; but I find twice sufficient. The first feed is given about six o'clock a.m. in summer, and about half-past seven in winter. This usually consists of wheat, buckwheat, or barley, with the addition of a small piece of turnip or carrot about the size of a small hen's egg. In summer, when clover or other green food is obtainable, a small handful of that is given instead of the roots. In feeding with the above grains, I alternate them; this gives the Rabbits a better relish for their food.

The night feed, which is given about six o'clock, is always

oats, with a handful of cut hay (clover if to be had), and when green food is scarce a small piece of carrot or turnip. If I can get fresh clover I dispense with both hay and roots. In using green food never give it while wet. My custom is to cut it and let it wilt before using; cut it when dry, and keep one day's supply ahead. Occasionally I give for the morning feed whole Indian corn; in the winter or in cold weather coarse Indian meal stirred into scalding hot milk, and covered closely for half an hour until it is steamed through; this mess must not be soft or mashy, but crumbly. Peas soaked a few hours, and then drained, make another good change for the morning food; once a-month, or oftener, a little linseed oil cake may be given with the Indian meal, but it should be quite sparingly used. Vegetables I use very little of, and only after being somewhat wilted. Lettuce is too cold and wet. Cabbage is somewhat better. In their season beet and carrot tops and pea haulms help along the bill of fare; but all these greens are only given as relishes, and that with a sparing hand. The too free use of very green or wet vegetable food will be certain to produce the most disastrous results: Pot-belly, dropsy, and other diseases are sure to follow. Dandelion tops are greedily devoured, and are a most excellent feed. This is an almost certain cure of the disease known as red water, and is an excellent corrective of other ills. Plantain leaves are also a safe and good feed if not used to excess. Potatoes roasted dry are also esteemed a most wholesome feed. All kinds of meal—oatmeal, barleymeal, and middlings are used by English fauciers, and recommended.

An English writer, quoted by Bement in his work published twenty years ago, says that the words "dry food" "should be printed in large letters, and placed in a prominent position in every rabbitry." In the observance of the teaching of these two words lies the key to success in this fancy. No matter what the provender consists of, always give a preponderance of dry food.

Some writers have recommended keeping a cup of water where the Rabbits can have free access to it; but this I cannot endorse. In extremely hot summer days I have given each animal a few spoonfuls of water morning and night; and my breeding does are given perhaps half a gill of water or milk for two or three days before and after kindling. I prefer to give milk when it can be had, as it is nourishing as well as thirst-quenching. At other times I never allow them to have water. A very little salt once a-week mixed with their feed is beneficial.

For condiments to tempt the appetite I use fennel, sweet marjoram, parsley, aniseed, chicory, and tea leaves dried; but these also should be used in small quantities, and more as a tonic than as a regular diet.

I thing I had nearly omitted the importance of removing all grain or food from the feed cups before putting in a fresh supply. After having breathed on the feed and nosed it over, the Rabbit, who is a dainty animal, will not eat it unless compelled to by hunger. A very little attention will soon learn the amateur how much each of his pets will consume, and he can regulate the feed so that none or scarcely any will be left. The feed cups should be often washed, for cleanliness is one of the indispensable adjuncts to success. The same cup or vessel should not be used for both wet and dry feed, unless thoroughly cleaned and dried after being used for the former.

Does with young should be more liberally fed, and with more nourishing diet than others. A slice of bread dipped in milk is a dainty treat for them, as well as being very nutritious. The amateur will find, however, that Rabbits, as well as himself, have their likes and dislikes, and while one will greedily devour some kind of provender, another will refuse to touch it. In such cases better humour the tastes of the animal rather than risk loss of flesh and sickness in trying to force upon it a distasteful dish.

To sum-up, my rules for feeding are: 1st, Dry food mainly; 2nd, Frequent change of diet; 3rd, Regularity in feeding; 4th, Cleanliness.—A. M. HALSTED.—(*Pet-Stock Bulletin*.)

### HONEY AND BEES AT SHOWS.

I ADMIRE the straightforward and thoroughly honest way in which your valuable contributor "B. & W." has put his views about shows; but I think if these views prevail, the day of shows will fast pass away.

I trust my last letter did not convey the idea that trickery "was perfectly understood" to be resorted to. What I intended was that the extraordinary things exhibited had been obtained by extraordinary means, and that it was "perfectly understood" that it was so; and I trust that neither my voice nor pen will ever be used to say one word in favour of "cheating or dishonesty," much less to defend it.

The point is, Is a show of necessity demoralising? I think it is not. Cannot an article be what it is represented to be, and be represented as what it really is? Where, then, is the harm?—no one is cheated or deceived. I would advise a rule to be made for all shows, and in the most stringent manner possible, that any article placed for exhibition being misrepresented, whatever that article might be, it should be forfeited to the committee;

that the exhibitor should for ever be debarred from exhibiting again, and that the case should be published in the report.

I never have exhibited anything myself, but had intended to do so at the Manchester Show, and should have so done, but for a mishap a few days before the time; and here is a case in point. A schedule of prizes was sent me, and I resolved to try in class A. I purchased a 20-inch straw hive. I placed a piece of guide-comb in it about 3 inches square, and six cross sticks, and on the 29th of May I put a good swarm of bees in it; and I venture to say that no one would have been better pleased than myself if my singing workers had accomplished the task I had set out for them without any further trouble or artificial aid. But the weather was against them, there being scarcely two fine days together; so I fed with syrup to promote comb-building, still hoping the good time was coming when the cells, so beautifully constructed, would be filled with honey. I united a small swarm to it on the 16th of June, and another on the 19th, when I placed an eke underneath 5 inches deep, for the hive (20 inches by 12) was nearly full of combs. (As the weather continued unfavourable, I commenced giving honey instead of syrup.) The bees increased in numbers amazingly, and commenced clustering outside, although my hive was 20 by 17. On the 3rd of July I gave them another 5-inch eke, and discontinued regular feeding, only giving them food now and then when there were several consecutive wet days, depending upon the heather in August; but in that I was disappointed by the same cause—bad weather. August 6th I artificially swarmed the hive, so that it might be free from brood when taken to the Show. August 12th it weighed 148 lbs. gross, and I took it about three miles from here to the moors. On the 16th I weighed it again, and it had lost 8 lbs. On the 20th I weighed it again, and it had regained 6 lbs; but as it only wanted a fortnight to the Show, I brought it home, and resolved to give it what honey it would take for a week, and from the Friday night until the Thursday following it took nearly 80 lbs. On the Thursday at noon I was going to take off the bottom eke, as it was not quite full of comb, when I had the misfortune to break some of the combs, and afraid I could not make it look nice, concluded not to exhibit it.

Now, all this was not done in a corner, for everything was open and aboveboard. I explained to everyone who came to my garden what I was doing, how I was doing, and what I was doing it for; and had the hive gone to Manchester it would have been as truthfully represented there. Am I to any extent demoralised by this performance? I think not. But if it had been done with an intention to deceive either the Committee or the public, I would denounce it as vigorously and as unhesitatingly as "B. & W." So I come to this conclusion: That if we are to have shows, there must be something really grand to look at, otherwise visitors will not come; but it need not be at the expense of "reality and truth." Let there be a properly-defined schedule of prizes, require truthful representation, and then we need not fear the result.—T. BAOSHAW, *Longnor, near Buxton*.

### EDUCATING PARROTS.

OF all the feathered pets, Parrots best repay the time and trouble bestowed on them. They can be taught to imitate the human voice perfectly, and when properly educated can repeat phrases, and even long sentences.

The Mexican, or yellow-headed Parrot, is the best talker, while the grey or African is most celebrated as a whistler, though nearly all varieties are susceptible of some instruction. In selecting a bird for education, it is important that it should be young and healthy. Treat it gently until it becomes accustomed to your voice and handling. When the bird receives lessons let it be in a dark room, where no other sounds can be heard but the voice repeating very distinctly over and over again the words to be learned.

As soon as the bird makes any attempt at imitation it should be rewarded with a nut, some fruit, or a piece of sugar, of all of which it is very fond. The teacher must not be discouraged if several weeks elapse before his efforts are rewarded. Parrots learn slowly at first, and should be taught to pronounce two words distinctly before receiving a second lesson. After being taught several phrases in this way they catch words and even sentences themselves. It is said they never forget anything once learned.

Strict attention should be paid to the cleanliness of the cage, and a plentiful supply of fresh sand provided every day. Their food should consist principally of stale bread dipped in water, squeezed dry, and a little milk poured over it. They are fond of nuts, raisins, and all kinds of sweet fruits. A few hempseeds may be given occasionally with advantage. They eat vegetables of all kinds, and drink coffee. Animal food should be avoided, as it injures the plumage.—(*Pet-Stock Bulletin*.)

### OUR LETTER BOX.

BOOKS (*Mrs. Walsh*).—The price of Wright's "The Brahma Fowl" is 5s Any bookseller can obtain it for you.

**CUPS FOR GAME FOWLS (Cheshire).**—As there is a cup for the best Game cockerel your cockerel must be shown in that class, and not in the class where there is a cup for the best Game cock. The words "any age" make no difference.

**TIME OF FERTILISING (A. C. C.).**—You may set the eggs certainly at the end of a week. We should expect them to be fertile at the end of four days.

**HENS EGG-DROPPERS (An Amateur).**—There is nothing the matter with your house or treatment except giving the buckwheat. Discontinue it, it is too fattening. Give two feeds of meal and one of whole corn. Give barley instead of wheat. If, as we gather, your perch is within 18 inches of the ground you have not the least need of a hen-ladder. The birds will hop up and down. The only way to cure the pullet of her bad habits is to remove the perches for a time. The fowls will not suffer from it.

**HATCH FROM A SITTING OF EGGS (Picatus).**—At any season of the year it is a fair average, and one with which we should be content, to hatch half a sitting of eggs. This year from our first sitting of nine we have five chickens; our two next were eleven each, and we have eight and nine from them. We hold to the opinion that in the early season a cock should have few (say five) hens with him. At present we are running ten hens to a cock. The buyer in your case has no claim whatever to another sitting. He has already hatched five, and has no right to expect as many now as he would in April.

**BUENOS-AYREAN DUCKS (Julius).**—They would be quite as successful if you bred them good. There is far more difference in Buenos-Ayrean than in Carolina or Mandarin. The former breed well, and belong to the class of useful birds—the latter are purely "fancy birds." There are few shows where Buenos-Ayrean can show in the variety class—they mostly have a class of their own.

**FOWLS FOR TABLE (Subscriber).**—We do not like crossos as a rule, but if there is one that is bearable it is that between the Brahma pullet and Dorking cock. It makes a good table fowl. We hardly understand that eternal craving for a non-sitter of a sitting breed, or for increasing the number of eggs Nature has allotted to a hen. No rule of Nature can be evaded or interfered with with impunity. You may mix sitters and non-sitters, you may make the Brahma lay rather more eggs, but she will be a restless and bad sitter. If you want table fowls you should have Dorkings, or Dorking and Brahma mixed, and they should have your best run. You will not, however, breed prize birds from parents closely confined, however good they may be. You must so arrange your walks or pens and runs as to allow both sets the use of the three acres. Our division would be to give the Dorkings two-thirds of the day, and the Brahmas one-third. It is seldom a stable is a good place, unless the flooring be covered some inches deep with sand, gravel, or earth. Stone, wood, brick, or clinkers are all bad for fowls to roost on, or to be shut up on.

**MANAGEMENT OF PIGEONS (Young Beginner).**—We cannot think of any safe plan for you to let your pair of Pigeons walk in your garden and yet not fly. If you cut their wings (a bad plan always) they would, in their loft, get falls and break a leg or bruise their breastbones. You might perhaps tie the long feathers of one wing, but we do not recommend it. If you make a little place of cheap galvanised iron wire for them out of doors, and carried them to it now and then, that might do, but if the hen were about laying you might lose an egg. As you really are a young beginner we advise you to send to our office for a copy of Brent's "Pigeon Book," free for nineteen stamps, and study its pages earnestly.

**CANARIES' EYES AFFECTED (E. L. P.).**—I have never met with such a case before. Do you think it can arise from cold, or does the affection appear chronic? As you have two birds suffering from the same complaint I should be inclined to think it is some form of infectious ophthalmia; and yet it does not seem to affect the general health of the birds. You can do no harm by bathing the eye with warm water. Hold the bird firmly but lightly, and bathe the eye with a sponge, or pour the water on from a spoon. You need not be afraid of drowning the patient, and must not be surprised at the forlorn appearance it will present when well soaked, for it will be next to impossible to confine the bathing to the spot affected. The bird will soon dry itself if placed near the fire, and will look all the better for the operation.—W. A. BLAKSTON.

**CANARY DYING SUDDENLY—GOLDFINCH FOR BREEDING (J. G. Webber).**—The bird must have died from epilepsy or apoplexy, or—something else. In the absence of other evidence to lay before the jury I would suggest a verdict of "Died from natural causes." A fresh-caught Goldfinch ought to be ready for pairing about the end of May, or a little earlier.—W. A. BLAKSTON.

**FEEDING FOR HIGH COLOUR IN CANARIES (Ally Sloper and others).**—I have been inundated with inquiries respecting this matter, and it is interesting to trace the under-current of feeling which pervades many of the communications. Many seem to doubt the potency of the simple recipe, and others, thinking something else lies hid, want to discover the little secret in a most disinterested sort of fashion. However, to all whom it may concern, to one hard-boiled egg add an equal bulk of bread crumbs or crushed biscuit, and to this add the Cayenne pepper. How much? A teaspoonful! You may begin with less, but the quantity they will eat must be seen to be believed. This I say advisedly, for those who will not believe Mr. Bemrose's *ipse dixit* will believe nothing till they see it—and many not even then. This mixture must be given daily, in addition to the ordinary seed, and must be begun while the blood is in circulation in the young feather—i.e., immediately before and during the moult.—W. A. BLAKSTON.

**POINTS OF A CRESTED CANARY (Highfield and Beginner).**—I will endeavour to illustrate the points of a Crested Canary by a sketch in a future issue.—W. A. BLAKSTON.

**BEE MANAGEMENT (Live and Learn—Godstone).**—You are in a locality which is excellent for bees, and there by a little attention and perseverance you will soon manage them with advantage both to yourself and the cottagers around you. You have not acted wisely in keeping the bees in their hive during the late mild weather. The sooner you open the door the better it will be for the bees. When snow is on the ground bees should be kept within their hives. You will do well to feed your bees in March three times a week. About half a pound of sugar mixed with half a pint of pure water will make three feeds for them. In April the quantity may be either increased or the food may be given more frequently. If your hive is a strong and healthy one it will require supering at the beginning of May. By turning up your hive you may cut guide comb enough out of it, without much injury, for your supers or swarm hives during this year. Doubtless guide comb and supers may be readily obtained from dealers, but we cannot recommend one in preference to another. Consult our advertising columns from time to time.

**BEEES IN SUPERS (Scybor).**—Your case is not singular as respects the bees taking possession of the supers. We are in the same predicament with three

of our hives, and are somewhat puzzled how to treat them. The stock hives below were no doubt utterly destitute of food when late autumn came, and the sensible creatures preferred to ascend to the attics, where they had stored their early summer supplies, rather than give themselves the unnecessary labour of carrying it below. If your supers are tolerably large, you might remove the stock hives now and reserve them for the time when the bees wanted room. They would then immediately take to them, and thither the queens would speedily descend and the supers become *bona fide* supers again. This is what we are inclined to do, if we do not let well alone and leave the bees to their own devices. The only gain to the bees that we can see in adopting the former course would be the saving to them of labour in passing in and out from the open air. Of course the beauty of the honeycomb in the supers will be spoilt, but better this than risking the loss of young brood already in course of rearing, and the sacrifice of many valuable hives in any process of translation at this season of the year.

**AGED STOCK HIVES (Idem).**—We think it better after eight or ten years to transfer bees to a new hive and destroy the old and blackened comb. No doubt there are instances where bees have thriven in much older hives, but in how many instances has there been failure? The proper time for doing this is after the issue of the first swarm, before the young queen's eggs have been largely hatched, say about a fortnight after the issue of the swarm. Put this in the old hive's place, which will tend to increase the young population in the latter and prevent its swarming a second time.

**HIVES (J. A. G.).**—Several makers advertise in our columns, and supply bees also. Write to them, and ascertain which can best meet your wishes.

**SUGAR (W. J. C.).**—Any wholesale grocer would supply you.

#### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Baromet- ter at 329 and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature.		In. deg.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.		In.	
Feb.												
We. 4	30.635	35.0	24.7	N.E.	41.3	43.4	31.9	63.0	28.1	—	0.019	
Th. 5	30.690	30.2	23.8	N.	40.2	34.5	29.2	56.1	25.7	—	—	
Fri. 6	30.488	26.7	26.5	N.E.	38.2	30.0	24.9	50.0	26.2	—	—	
Sat. 7	30.823	27.8	27.7	W.	37.7	44.3	35.3	63.3	36.0	—	—	
Sun. 8	30.095	41.0	37.5	N.	38.4	44.7	27.3	52.3	27.6	—	—	
Mo. 9	30.298	23.9	23.4	N.	38.2	38.4	24.9	52.6	21.7	—	0.010	
Tu. 10	30.506	31.0	30.5	N.	37.1	34.8	27.3	58.0	23.8	—	—	
Means	30.421	31.8	30.7		38.7	38.6	27.3	59.6	25.5	0.029		

#### REMARKS.

- 4th.—Rather frosty, but a fine pleasant day.  
5th.—Foggy and dark in the morning, and so continued all day.  
6th.—Fog in the morning; much brighter about noon, but still foggy, at times very dense.  
7th.—Fog with white frost in morning; very fine day; the frost gone by noon and much warmer.  
8th.—Fine early, and occasionally so all day; small snowballs or "grapel" falling between 3 and 4 p.m.  
9th.—A very fine, bright, cold winter's day.  
10th.—Slight snow between 5.30 and 7 A.M., from which time it was a fine frosty day.  
The mean temperature at 9 A.M. 10° below that of the previous week; dense fog at times, but some nice bright winter weather.—G. J. SYMONS.

#### COVENT GARDEN MARKET.—FEBRUARY 11.

We have but little alteration to report here, the markets generally being very quiet. The supply, however, is quite sufficient for all requirements, the prices being rather below the average of former years. A large quantity of Potatoes is offered at the depots and waterside premises, the bulk being in very fair condition.

#### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	0	0	Mulberries.....	1	0	0	0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	1	0	0	0	Oranges.....	100	4	0	12
Chestnuts.....	1	0	20	0	Peaches.....	doz.	0	0	0
Currants.....	1	0	0	0	Pears, kitchen.....	doz.	1	0	2
Black.....	doz.	0	0	0	dessert.....	doz.	2	0	0
Figs.....	doz.	0	0	0	Pice Apples.....	lb.	3	0	0
Filberts.....	lb.	1	0	1	Flumes.....	1	0	0	0
Cobs.....	lb.	1	0	1	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, house.....	lb.	2	0	7	Strawberries.....	1	0	0	0
Lemons.....	100	4	0	12	Walnuts.....	bsnshl	10	0	16
Melons.....	each	1	0	0	ditto.....	100	2	0	2

#### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	8	Mushrooms.....	potl	1	0	2
Asparagus.....	100	4	0	8	Mustard & Cress.....	punnet	0	2	0
French.....	25	0	0	0	Onions.....	bsnshl	8	6	0
Beans, Kidney.....	100	2	0	0	pickling.....	quart	0	6	0
Beet, Red.....	doz	1	0	8	Parsley per doz. bunches	4	0	6	0
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1
Cabbage.....	doz.	1	0	1	Peas.....	quart	0	0	6
Capsicums.....	100	1	6	0	Potatoes.....	bsnshl	3	6	4
Carrots.....	doz	0	8	0	Kidney.....	lb.	0	0	0
Cauliflower.....	doz.	3	0	8	Round.....	do.	0	0	6
Celery.....	bundle	1	6	9	Radishes.....	doz. bunches	1	0	1
Coleworts.....	doz. bunches	2	8	4	Rhubarb.....	bundle	0	9	1
Cucumbers.....	each	1	0	2	Salsify.....	bundle	1	6	0
pickling.....	doz.	0	0	0	Savoy.....	doz.	1	0	2
Endive.....	doz.	2	0	0	Scorzoneria.....	bundle	1	0	2
Fennel.....	bunch	0	3	0	Sedgelo.....	basket	1	0	2
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	8	0
Herbs.....	bunch	0	3	0	Spinach.....	bsnshl	2	0	8
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	2	0	4
Leeks.....	bunch	0	3	0	Turnips.....	bunch	0	8	4
Lettuce.....	doz.	1	0	4	Vegetable Marrows.....	doz.	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 19—25, 1874.	Average Temperature near London.			Rain in 45 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
19	Th	Meetings of Royal and Linnean Societies.	44.9	31.0	37.9	15	8 47	20 45	33 8	14 9	3	14 4	50
20	F		45.5	30.7	38.1	20	6 7	22 5	43 8	41 10	4	13 58	51
21	S		46.7	32.3	39.5	20	4 7	23 5	3 9	morn.	5	13 51	52
22	SUN	1 SUNDAY IN LENT.	46.8	31.9	39.3	19	2 7	25 5	23 9	9 0	6	13 43	53
23	M	Meet. of Royal Geographical Society, 8.30 P.M.	47.4	31.5	39.4	14	0 7	27 5	47 9	35 1	7	13 35	54
24	Tu		47.1	32.8	39.9	20	58 6	29 5	20 10	55 2	8	13 26	55
25	W	Meeting of Society of Arts, 8 P.M.	47.7	32.7	40.2	23	56 6	31 5	5 11	7 4	9	13 17	56

From observations taken near London during forty-three years, the average day temperature of the week is 46.6°; and its night temperature 31.8°. The greatest heat was 63°, on the 25th, 1868; and the lowest cold 10° on the 21st, 1855. The greatest fall of rain was 0.92 inch.

## MY SEED ORDERS—A RETROSPECT.—No. 2.



MY term of responsibility arrived. I am sure it toned down my criticism on the practice of a veteran who, I had thought, was so far behind modern times and requirements. I thought of the never-failing supply of vegetables in season, and the satisfaction they must have given, a complaint being never thought about. His advice, which had become a proverb, and which, I fear, was once deemed obsolete, or made up of an old man's prejudice, came sounding in my ears, and like the lingering refrain of a tune that haunts the memory, it would not be shaken off. "A few things and good to depend on, and of these a strong lot," I began to think might be sound doctrine; it might be the outcome of half a century of practice, and not the mere dictate of octogenarian prejudice. It shook my youthful infallibility, and I sought advice; but where? In the very place where most young men mistakingly fly to—viz., a "clever young fellow." The world is full of them; we meet them everywhere; their confidence is alluring, and their assurance and address fascinating. They are fully abreast of the times, if not a march in advance. They must know better than the "old school." If you ask them a question you get an answer. They cannot afford to admit their ignorance, it would be derogatory to their reputation and standing. They wear spectacles of enthusiasm, and are ever making "discoveries." These are the men to give advice. This is their great forte. Asked or unasked it is all the same; they are full of notions and opinions—inspirations of genius—and being philosophers too, the world must have the benefit of their knowledge. Ask them, Do they ever contribute to garden literature? and you soon find they "don't care for papers;" have been "wanted to, but have declined." When they were at so-and-so they took all the best prizes for this and that, and the gardener got all the credit and reward—they, of course, growing the things; he, poor old man, knowing very little about it. It was such a one as this who upset my convictions inherited as the legacy of my old friend; and now I will upset his theoretical fancies, and his mythical skill shall fade away when tried against quiet, unobtrusive, and long-won experience.

We took the catalogues, and stopped first at Beet. The one sort that had given such satisfaction for years past was almost, but not quite, left out, and four other varieties distributed over the allotted Beet ground. One of the new ones was fortunately the same as the old one, or a Beet famine was inevitable, the others by shape, taste, or colour not being liked. What advantage then, suggests common sense, in growing half a dozen sorts when that which pleases the best is known? Why not occupy the ground with it alone, and have an abundance? From that day to this it has been done, and year by year not a complaint is whispered. The old man was right, the young one wrong. Beets and palates vary, and better than queting an individual sort by name

it is more sensible advice to say, Prove the kind most liked in your individual case, and whatever others are grown keep to the best in the main, and have sufficient of it alone for all demands; then you are safe, and may still enjoy variety, if ground is plentiful, by limited trials of other kinds.

We next come to Cabbage—one of the most important crops if early. Earliness is a supreme condition, affecting its value, as all know who have had to wait for Cabbages "turning-in" after the Winter Greens would no longer fill the vegetable basket. In my order eight sorts were marked and grown; but never again shall my trust be put in catalogue descriptions of this standard vegetable. There are far too many in the market to bewilder and disappoint. But for a sowing, amongst the rest, of a little seed of my old chief's saving the place would have been cabbageless in Cabbage time, and I do not like to think what would have been the result. I have tried, I may say, scores of varieties, or rather scores of names, in my time, and have come to the conclusion that strains are now more numerous, but less distinct and pure, than they were thirty years ago. And the worst of it is, if you order a given kind at three different places it is more than possible you will get at least two varieties, perhaps three, but it is almost impossible to obtain the same one sort ordered from all. The Cabbage seed trade is out of gear. The array of names and aliases is too great to keep in order. The individual is lost in the multitude. There are, no doubt, good early sorts, but the difficulty is to know where to send and what to send for with security. I will say no more than that with three sorts I am never scarce; I used to do it with two, but I have added Cocca-nut to the true Atkins' Matchless and Early York. The old man's practice and his one sort again put to confusion the young man's eloquence on the eight "splendid new varieties."

Cauliflowers are like Spanish grandees—a good many names attaching to one individual. In youthful ardour I tried all, and no harm came by it, but in the course of years have come down to my old friend's number. I can nearly do everything required with one—Walcheren, and quite when I add to it a first-rate type of Early Erfurt. With these two and Broccoli I can cut heads of first-table quality every day in the year, the first Broccoli, Snow's, promptly following the last Cauliflower, Walcheren, in January; and the first Cauliflower, Erfurt or Dwarf Mammoth, following as promptly the last Broccoli, Cattell's Eclipse, in June. That does all that is needed. But before leaving Cauliflowers I must say that for giving away or exhibiting, and small ones for home use, Veitch's fine introduction, Autumn Giant, has won a permanent place. But what is to be said on the other mighty host of Broccoli? Of numbers under different names I will venture to say that they are so much alike that you cannot tell "t'other from which." Most, however, are good; Adams' Early, Dilcock's Bride, and Wilcove, with the two above named, give me an un-failing succession, and are of more real use than I found double the number of sorts in my earlier days.

Onions, which were once a source of anxiety to me as to ordering the best, were only got over by my clever young adviser voting this and that indispensable, until we embraced all in "large type," and now, like my old tutor, they have gradually come down to two. With James's Keeping and White Tripoli I never know what it is to be short of Onions for above five minutes at a time.

Just a word on Lettuce. Year by year odd sorts dropped out of the order, and only two remain—viz., Hardy Green and the old Black-seeded Bath Cos. Don't, young friends, cry "ridiculous," because the last requires tying. It does, but then there is no Lettuce like it for true, full flavour, solidity, and crispness; and if you have a Lettuce-connoisseur to supply, you will find that nothing will satisfy so well as this old kind if only put on the table in first-rate trim. It is not at all uncommon, indeed it is frequent, for visitors at the table to come into the garden the next morning, see the Lettuce growing that they found so good to eat, and take down its name. No more need be said, except that whatever others are grown this is the Lettuce to depend on for the main supply summer and winter. If it ever fall to my lot to describe it in a catalogue I shall say, "Still the hardiest and the best."

Need I say anything on Beans? Perhaps only to observe that Carter's Champion is an improvement on the old Scarlet Runner; and as to dwarfs, Negro for strong land, and the old Mohawk for light soils, may always be depended on to do their duty well. Common Broad Beans hardly demand a word, but in point of quality Beck's Dwarf Gem heads the list and should never be omitted. As to the larger ones, the best or the worst will neither make nor mar any man's reputation, and as there is not much danger of a wrong choice I can, with a good conscience, "leave them to chance."

I pass on to Peas. Here anxiety and perplexity once culminated. It is not so now. I have no misgivings as to what to order to "follow one another," and have no lurking fear of having to change "a word or two of a sort" with the heads of the kitchen and parlour. Mind, I am not going to say a word against the new varieties, as I know how good some of them are, but I will say this fearlessly, that by growing too few or too many sorts you spoil all. I have neither stolen nor begged experience on the point, but bought it. Had I been content to follow my safe old guide instead of putting my trust in the young one, I should never have been driven to make explanations and frame apologies in the all-important matter of Peas. Once on a time, when I thought I knew most things—and the few I had overlooked my precocious friend had duly appropriated—my seed order, of course, embraced about twenty varieties. The "row of a sort to follow another" was to gain its just triumph. Ancient prejudice was to be swept out of the garden by modern practice. The past was to be lost in the success of the present. The old system must die and the new style reign supreme. How futile! They were duly sown, the nicest possible calculations being made as to the time of each coming in to "follow one another." But they did not keep correct time—and then, what? Why, of course, we blamed the seedsman for not sending them true to name. How often it is that ignorance begets injustice! The sorts were good enough in themselves, but by having too many kinds and too few of each, we spoiled all, and in this way we were often driven to make-up a dish of two or more varieties. Young men, that won't do. Mix Laxton's Quality and Hundredfold, for instance—two excellent Peas in themselves—but the mixing spoils both; or two older ones, Champion of England and Prizetaker, and then—be ashamed. If I were driven to put a mixture like that on my employer's table now I should feel as if I had committed a crime; but I know better. I always have an abundance of the best, and these are just my old friend's number. Years have proved him right and my youthful genius wrong again. And what are the three—the chosen as the result of many years' actual practice? First I must say that my employers prefer to wait a week and dispense with all the early rounds, and begin with Laxton's Alpha as the first of the wrinkled Marrows. This, then, is my standard early, sown over and over again, followed by Champion of England, ditto, ditto, as still the best for the general crop; and this again succeeded, in like manner, by the fine well-proved genuine late Pea, Ne Plus Ultra. With these three I can do all that is required. They give three certainties, each indispensable—viz., certain as to quality, quantity, and time.

I need not further enumerate. I have proved the soundness of the advice of an old practical man, and can endorse it by a no inconsiderable amount of experience as, if not absolutely

the best, yet thoroughly reliable to meet everyday wants, and as satisfying alike master and servant. Just as my seed-orders have grown less in variety, just in the same proportion has success become greater, until a complaint was never heard. That is the great goal to aim at. Until it is reached gardening is a hard and wearying race; but when obtained, hard work becomes easy and servitude pleasurable. I have pointed out the rock on which I split and the way I righted. It is the one and common track of danger—a fascinating track, on which hundreds of young gardeners are allured. If they will read, consider, and trust hard-bought experience they may save themselves much trouble which undue enthusiasm may more than possibly produce. If the young think the older brethren of the craft require pushing on, certainly the old consider a word of caution salutary in holding somewhat in check the professional impetuosity of youthful friends, whom they desire to see prosper and grow into better men than themselves.

"But surely all this is very old-fashioned," some may say; "these old things must be out of date." No, they are not: they are the very sheet-anchors of the vegetable garden, and will serve it well in the future as they have done in the past. But what about the new ones? Buy them and try them. They will give a vast amount of interest and pleasure. The skill, perseverance, and enterprise which produce them demand acknowledgment. Of their comparative merits I cannot write at present, feeling my letter already too long.—OLD FRIEND.

### LONICERA FRAGRANTISSIMA AND L. STANDISHII.

We have received from Mr. George Lee, of Clevedon, specimens of *Lonicera fragrantissima*, with the following communication:—"I had it some years ago from Mr. Rivers, under the name of *Lonicera odoratissima*. I had another some years previous under the name of *Lonicera fragrantissima*, which I have since had from Mr. Cranston, of Hereford, under the name of *L. Standishii*. They are each hardy, as far as mature growth goes, but the young growth of *odoratissima* is killed by the frost. *L. fragrantissima* commences flowering in October, and continues, except in very severe frost, till April. *Odoratissima* does not begin till February or early in March as a rule; but the reason I have sent it is because I think it deserves to be much better known as a wall plant, on account of its beautiful evergreen foliage, as you will see from the two branches I have sent, as well as on account of its delicious perfume. It will grow as a shrub, but then it loses its leaves in winter if in exposed situations, but against a wall it continues green. The specimens sent are from a north wall."

According to M. Carrière, in "*Flore des Serres*," *L. fragrantissima* and *L. Standishii* are distinct; the former he describes as spreading almost horizontally with a whitish aspect, and never completely without leaves, the new ones appearing at the same time as the flowers before the fall of the old ones. *L. Standishii*, he says, is a close erect bush with numerous short branches, and with a reddish-brown or russet aspect. Its flowers are much more numerous, more conspicuous, slightly coloured, and at the time of their appearing the plant is entirely without leaves.

But M. Carrière says both bloom from January till March. Both specimens sent us are clearly *L. fragrantissima*, and that one must be a most desirable variety of this species, which, as Mr. Lee says, begins to flower in October, and continues till April.

### TSUGA TSUJA.

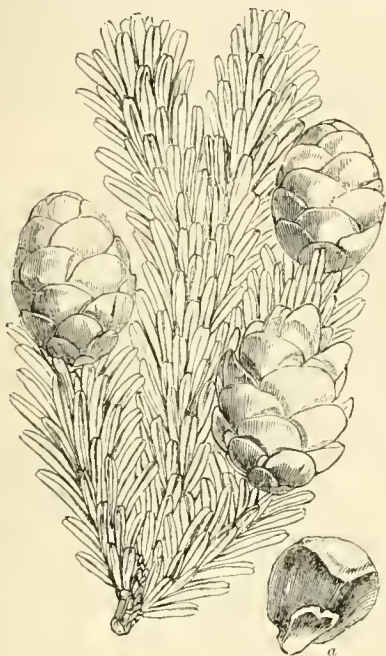
A CORRESPONDENT, "CONIFER," inquiring for a description of this Japanese Hemlock Spruce, justly complains of "its barbarous naming." He might also have complained of its numerous renamings. Siebold, its discoverer, called it *Pinus Araragi*, and other botanists have written of it as *Abies Tsuga*, *Pinus Tsuga*, and *Tsuga Sieboldii*. It is thus noticed by Mr. Gordon:—"The Japanese names for this Fir are *Tsuga* (Yew-leaved) and *Araragi* (Yew-like). It is much used for planting round their sacred temples on account of its graceful appearance, and a variety of it, called *Hime*, or *Fime-Tsuga* (dwarf Yew-leaved), is much cultivated in pots by the Japanese in their town gardens, the plants never growing more than a yard high under such circumstances, and with much smaller foliage."

"It is said to be a large tree, attaining 100 feet in height, at an elevation of 6,000 feet, on the sacred mountain Fusi-

Yama, near Yeddo. The Fusi-Yama is the highest mountain in Japan (14,000 feet), with dense Pine forests, chiefly composed of this kind, covering its sides to 8,000 or 9,000 feet of elevation."

The best description of this Conifer is by Mr. A. Murray in the "Proceedings of the Royal Horticultural Society," from which we extract the following. The woodcut is one of our own.

"A tree of from 20 to 25 feet high, of the habit of *Abies* can adensis, to which it is closely allied. Trunk erect, with yellowish brown timber. Branchlets with a dirty cinereous brown bark; the youngest slender, glabrous, pale brownish; pulvini angularly decurrent, thickened, and turned upwards, wholly adpressed to the branchlet; phyllula semi-orbicular. Buds surrounded with scales, which are very numerous and imbricated; the lower scales ovate, obtuse, keeled, glabrous, coriaceous, abbreviated, persistent, but not placed remote from



*Tsuga Tsuja.*

each other; the upper (and inner) scales much longer, spatulate, obtuse, membranaceous, and deciduous. Leaves from 6 to 10 lines long, perennial, approximated, and alternate, but subdistichous from the lower leaves being more or less twisted at the base, distinctly stalked, with the stalk rather long and slender and slightly curved, linear, generally obtuse and emarginate, rarely somewhat sharp-pointed, entire, glabrous, coriaceous, above deep clear green without stomata, below keeled, with a midrib, on each side of which is a white line of from seven to ten stomata. Male catkins growing in the axillae of the branchlets of the preceding year, scattered, solitary, encircled with scales; the scales more numerous than in the leaf-bearing buds, closely imbricated, in other respects conformable to them; the catkins themselves cylindrical, stipitate, with a straight stiff slender cylindrical stalk, longer than the scales. Stamens numerous, at first closely imbricate, afterwards somewhat looser, spreading out horizontally, rather long; the filaments filiform, dilated at the apex into a scale, or a small spatulate obtuse entire coriaceous connective appendix, from the base of which descend two divergent elliptical longitudinally bivalve loculi. Female catkins solitary, terminal on the branchlets of the preceding year, erect, at first enclosed in scales as much as the male catkins, and afterwards emerging on a short footstalk, to whose base the scales are persistent. Cones ripen the first autumn, small, not an inch in length, sub-elliptical, narrowest at the apex, remaining on the tree after the fall of the seeds. Scales (a in cut), inside, with seeds, about thirty in number, imbricated, coriaceous, glabrous on the outside where exposed, tomentose inside and where covered on the outside by the neighbouring scales, and

somewhat shining pale brown, nearly orbicular, deeply emarginate and stipitate at the base, slightly emarginate at the apex; margins entire, substriated where exposed. Bracts short, rather broad, closely adpressed, bifid or bilobed from the midrib, not extending so far as its wings on each side. Seeds small, ovato-rhomboidal, inequilateral, somewhat compressed, with depressed spots of various size on the test, and with globules of resin shining through the skin; the wing pale, ferruginous, membranaceous, straight behind, abruptly expanded from the seed in front, thence obliquely directed to the apex, which is sub-truncate, nearly a third shorter than the scale."

## POTATOES.

THE value of this crop and the interest excited about it must be my apology for having a few more words on the subject. I have given my own experience, and have nothing further to add on that score; but I am anxious to ask my former neighbour and friend Mr. Luckhurst whether he considers it desirable to lift the crop when the skins rub. I have always understood that there was danger as to their keeping if they were in this state. My Victorias last year were green in the haulm and the crop large; and I intended to lift them early in August, but found that the coats rubbed so easily that I was afraid to do it, and left them a while longer, and the result was a terribly diseased crop. I am now (February 14th), planting my entire stock, and hope to have all finished by next week, thus expecting to have an early ripened crop; but on this point, as to the rubbing of the skin, I should be glad to be informed.

I am afraid your correspondent "J. P." will challenge my sanity if I venture to express a doubt as to the decisions at Chiswick with regard to Potatoes, but for practical purposes I hold that those trials are not sufficient. What ought to be done is to have the Potatoes sent in, and from those grown there a trial to be made the second year. I have long felt that the place whence our seed came made a good deal of difference in the crop; and hence there ought to be, to ensure a fair comparison, a trial from Potatoes all grown on the same kind of soil and in the same locality. I feel this the more because I cannot understand the praise given to the American varieties. Either they are entirely different to what I have ever found them, or else the ideas at Chiswick as to what constitutes a good Potato are very different from mine. There is not one of them that I have seen that I would give garden room to. They are, it is true, large croppers, and some of them fine-looking both in haulm and tuber; but they are very subject to disease, and like Paddy's horse, which was "a mortal bother to catch, and when he was caught wasn't worth the bother."—D., Deal.

## A GOOD FIG.

THE other day I heard a Spanish proverb, that a good Fig should have "the eye of a widow, and the cloak of a beggar." The tattered covering through which the flesh is seen is a good proof of excellence, and the weeping eye is desirable; but there are first-rate sorts, as the Col di Signora Nera, whose eye is not moist, while White Marseilles, an inferior sort, drips in the most approved manner.—G. S.

## DESTROYING GREEN FLY.

ON going into my Cucumber house one morning last week I found some Strawberry plants covered with green fly and red spider. I called to mind what I had seen in "our Journal" about the ammonia in guano being fatal to insect life, and determined to try the effects of some liquor made up of chamber wash, soapsuds, and dish-washings, knowing that the said liquor was highly charged with ammonia. About two gallons were put into an old iron bucket, and made so hot that I could barely handle the syringe, through which the hot fluid was given a good soaking, thereby filling the house entirely with steam. The morning after there was not a live insect in the whole house, and all the plants, Cucumbers as well, are looking much better for their bath.—WILLIAM OSBALDISTON, Fulwood.

SALE OF ORCHIDS AND TREE FERNS.—Mr. J. C. Stevens had a sale of Orchids and tree Ferns on the 6th inst. Of the Orchids, *Oncidium zebrinum* sold for £1 8s.; *Odontoglossum Hallii* for £3 10s.; *Oncidium æmulum* and *superbiens*, each £3 10s.;

*Odontoglossum coronarium*, £2. Of the tree Ferns, the highest price was £3 15s. for a *Cyathea dealbata*, having a trunk 2 feet 9 inches high. Mr. Stevens also sold on the 12th inst. five hundred lots of Orchids, realising about £700. *Dendrobium Jamesianum* sold at from 20s. to 50s. per lot; *Cœlogyne* (*Pleione*) *Reichenbachiana*, from 30s. to 57s. 6d.; *Saccolabium Blumei* majus, a strong plant, 52s. 6d.; two of *Odontoglossum Roezlii*, five guineas; and *Saccolabium præmorsum* for 65s.

## ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 18TH.

At the January meeting scarcely anything was exhibited; at this, on the contrary, there was an excellent display. Novelties were fairly represented, of older plants several beautiful specimens, and of mixed groups no lack, and among these Orchids reigned paramount, while the brilliant colours of the Cyclamens and Camellias lent a glow to the whole.

**FRUIT COMMITTEE.**—Alfred Smees, Esq., F.R.S., in the chair. A collection of Variegated Greens was exhibited by Messrs. Stuart & Mein, of Kelsco. They are the same as have been before the Committee for several years past. Mr. Clayton, gardener, Grimston Park, sent a box of the "Grimston Park variety of Lion House" Cucumber, which does not differ from the original variety. Mr. Bennett, gardener to the Marquis of Salisbury, at Hatfield, sent tubers of a handsome seedling Potato raised from the American Early Rose, and it was recommended to be grown in the garden of the Society.

Mr. Horley, Toddington, Beds, sent a seedling Apple, and one was also received from Mr. I. Wernmington, Neeton Lane, Gulsborough, both of which were considered inferior varieties. Mr. Bennett, The Gardens, Hatfield, sent a dish of Lowndes' Pippin—a good-sized cooking Apple, and also dishes of Winter Bon Chretien and Uvedale's St. Germain Pears.

Mr. Jones, The Royal Gardens, Frogmore, sent three very handsome fruits of Smooth-leaved Cayenne Pineas, which were awarded a cultural commendation.

Messrs. James Carter & Co., Holborn, sent ten dishes of Potatoes, among which were New Snowflake—a newly-imported variety not yet in commerce, and Peach Blow, Carter's Main Crop, Early Rose, Late Rose, Extra Early Vermont, Vermont Beauty, Gleeson's Late, Compton's Surprise, and Red-skinned Flourball, for which the Committee awarded a letter of thanks to Messrs. Carter.

**FLORAL COMMITTEE.**—W. B. Kellock, Esq., in the chair. A very good collection of Orchids, Cyclamens, Amaryllids, and other plants was sent by Messrs. Veitch, Royal Exotic Nursery, King's Road, Chelsea. In it were *Odontoglossum pulchellum* majus, a perfect gem, nothing could be better for wedding or other choice bouquets; *Angreum citratum*, which had a first-class certificate, forming a compact exquisite wreath of creamy-white flowers; a pure white form of *Cattleya Trianae*; *Lælia Pilcherii*, a garden hybrid, the sepals and petals delicate blush; *Amaryllis Leopoldii*, maroon crimson centre, margined with creamy blush; and *A. Ackermanni pulcherrima*. There were also a number of seedlings of considerable promise, crosses with *Hippeastrum pardinum*. *Toxicophlæa spectabilis*, a stove shrub with heads of white flowers delicately scented, received a first-class certificate. A cultural commendation was awarded Messrs. Veitch for their fine group of Cyclamens.

Mr. B. S. Williams, of Upper Holloway, also sent a collection of plants, prominent among which were the valuable winter-flowering Orchids, *Cœlogyne cristata*, *Odontoglossum nebulosum*; *Calanthe Turneri*, perhaps the best of the vestita section; and *Renanthera coccinea*, a very healthy specimen with a branched spike of its quaint flowers. This was awarded a cultural commendation.

Mr. C. Turner, of Slough, sent an excellent group of plants, comprising standard Aucubas, green and variegated, profusely covered with berries; and Zonal Pelargoniums very well flowered for the season. Messrs. Standish & Co., Royal Nurseries, Ascot, likewise sent a group of Azaleas, Bouvardias, Chinese Primulas, the white-flowered Abutilon Boule de Nègre, Lily of the Valley, &c.

Mr. W. Bull, of Chelsea, had first-class certificates for *Pleocnemia Leuzeana* with graceful glossy fronds; *Alsophila elegantissima*, another handsome Fern with wide-spreading, shining fronds; *Rapatea pandanoides*, and *Hippeastrum picturatum*, very distinct in colour, white striped with crimson. Along with these were *Alpinia vittata* with cream-variegated leaves, and *Copernicia* or *Corypha cerifera*, a very ornamental Palm.

A grand collection of cut blooms of Camellias was exhibited by Mr. W. Paul, of Waltham Cross. The most noteworthy were *Marchionessa of Exeter*, *Alba plena*, *Fimbriata*, *Elegans*, *Imbricata*, *Ullante*, *Principessa Aldorandina*, salmon flesh, peculiarly beautiful and delicate in colour; *Bealii*, very rich in colour;

*Sarah Frost*; *Jenny Lind*, a beautiful and fine-constituted variety; and *Madame Lebois*. Mr. W. Paul also exhibited his Waltham White Chinese Primula, which had before received a well-deserved first-class certificate.

Mr. F. Perkins, of Leamington, sent Chinese Primula Prince Arthur, semi-double, rose crimson, very showy; a first-class certificate was awarded. Mr. Smith, Ealing Dean Nursery, also sent a variety of the same character, but much paler in colour, called Carmine. From Mr. R. Dean, Ealing and Bedford, came a collection of Primroses; *Viola* had a first-class certificate.

A noble specimen of the beautiful golden-and-white *Cœlogyne cristata*, exhibited by Mr. Child, gardener to Mrs. Torr, Garbrand Hall, Ewell, was awarded a cultural commendation; and a first-class certificate went to Mr. Mitchell, gardener to R. F. Ainsworth, Esq., Manchester, for *Dendrobium Ainsworthii*, a hybrid between *D. heterocarpum* and *D. nobile*, with flowers larger, more creamy, and with not so deep-coloured a blotch as the latter.

Mr. George Lee, of Clevedon, Somerset, offered four special prizes for two plants of his fine new Violet *Victoria Regina* (of which an engraving and description were given in vol. xxiv., pp. 265 and 266), flowering in 6-inch pots; and similar prizes for The Czar. There was hardly any competition, and none of the specimens shown were remarkable. Mr. R. Deau was first for both varieties; J. Maguire, Esq., The Hollies, Northampton, being second for *Victoria Regina*.

## CROCUS IMPERATI.

A MEET companion for the choicer species of Christmas Rose (*Helleborus*), the brave little, cold-defying, ever-flowering Violet Cress (*Ionopsisidium*), that hardiest, earliest, and most floriferous of flowering shrubs, *Rhododendron præcox*, &c., is that magnificent Calabrian Crocus named by Tenore after the old Italian botanist Imperato, *C. Imperati*. Here is a plant, the showiest and most stately of the genus, which puts forth its beautiful and fragrant blossoms weeks and weeks before the earliest of the yellow or other spring Crocuses dare to venture theirs, beginning to flower in midwinter, and persistently continuing to bloom well into the first month of spring. In habit too, and bold appearance, it is superior to any of them, and further, is remarkable for the delicious primrose fragrance of its flowers. One of its distinguishing features, too, is that, unlike other species, the pretty dark green foliage appears long before the flowers, sets off their beauty to advantage, and enhances not a little the value of the plant for the purpose which we have immediately in view. The three outer divisions of the flower are yellowish-white, with three well-marked feathered longitudinal stripes of purple; the three inner nearly or altogether purple; the anthers are yellow, the stigmas orange and fringed. There is also a white variety of it which is very fine, but somewhat rarer than the species; it also is somewhat later in flowering. For bordering, say a tastefully-arranged circular bed of Hellebores for border lines or patches, or any other situation in the shrubbery or spring flower garden which taste or fancy may suggest, we confidently think our readers will find in the precocious, winter-defying, and beautiful Crocus *Imperati*, one of the choicest subjects they could take in hand, and we hope ere long to find it better known, and see it far more extensively grown than it is.—(*Irish Farmers' Gazette*.)

## NOTES AND GLEANINGS.

A CURIOUS form of CHINESE PRIMROSE has been raised in the garden of the Royal Horticultural Society at Chiswick. It is like that which we lately figured of the common Primrose, and which was called by the old florists Jack-an-apes on Horseback. The stalks produce flowers in whorls, and the bracts are so enlarged as to become foliaceous; in some cases the calyx is also foliaceous as in the Galligaskins. It is a very grotesque-looking thing.

— According to the Californian papers, ORANGE CULTURE is there taking a large development, and is becoming extremely profitable. It is estimated that as much as three thousand dollars an acre can be realised.

## ECONOMIC CONSUMPTION OF COAL.

THE Exhibition of appliances for the economic consumption of coal, which has been formed in the Peel Park, Salford, by the Society for Promoting Scientific Industry, was formally opened on the 6th inst. Mr. J. Lowthian Bell, who had been

announced to open the Exhibition, was prevented from being present, but forwarded the copy of an address which he had intended to deliver. This was read by the Secretary, Mr. Larbins. The Exhibition will remain open for some weeks, and will doubtless receive its share of public notice when the elections are occupying less attention than they are at present. The domestic stoves and ranges, and the patent and other artificial fixtures, of which there is a good selection, naturally attracted the most attention from the general public. The fire grates, kitchen ranges, and stoves of new and improved designs are particularly numerous, and especially interesting as indicating the progressive steps which are being made in effecting a reformation in the extravagant waste of fuel in domestic consumption, which Mr. Lowthian Bell very forcibly pointed out in his address. In the artificial fuels the manufacture of peat holds the prominent place, and here very important strides have of late years been made. Blocks of peat as hard and as dense as coal are exhibited, and in some cases the manufacture of this material has been carried to such perfection that the blocks admit of moderately delicate carving. Amongst the other artificial fuels, probably the most remarkable is the patent "Phoenix fuel," which is composed from the refuse of coal fires by the admixture of a patent compound fluid. The formal opening proceedings in connection with the Exhibition were followed by a conversazione in the evening, held in the Peel Park Museum. We may publish more notes on the Exhibition shortly.

### TOWN GARDENING.

I QUITE comprehend the difficulties of your lady correspondent (page 146) respecting flower gardening, &c., near a large town.

It has been my lot to have three summers' experience here, in the vicinity of Liverpool, only two miles from the Exchange, and I have reason to believe if there is one locality more than another in the United Kingdom where the culture of flowers, fruit, or vegetables is carried on under difficulties it is this. In addition to the atmosphere being charged with sulphur, and clouds of smoke constantly descending and leaving its imprint of soot upon every green leaf under glass as well as outside, we often feel the effect of a cutting west wind coming up from the Mersey with great violence; and in the early part of the summer I have seen the ground literally strewn with young green leaves cut from the trees by its influence; yet under these circumstances it would not do to leave the beauty of our flower gardens entirely to the mercy of a few annuals. Far from this. Bedding-out is carried on to a great extent almost to the heart of this great commercial town, and in many instances exceedingly well, especially at the Prince's Park and the Botanical Gardens. Of course only such of the hardiest varieties as can be relied upon are used, and these consist of a great number of the most varied and beautiful of our bedding plants.

I will enumerate a few of these for the help of those who may require it. In Scarlet Geraniums I think Vesuvius the best in its class; Nosegay, Waltham Seedling, and Lady Constance Grosvenor. In its colour, old Christine holds its ground; Amy Hogg also suits admirably. In Golden Tricolors Sophia Dumaresque seems more vigorous than Mrs. Pollock, although the latter did well with me last season; in Silver, Bijou and Flower of Spring. In Bronze, Beauty of Calderdale is preferred for our requirements. Calceolarias, Aurea floribunda, Prince of Orange, and Sparkler. To insure success with this class of plants they ought to be planted-out early, say about the end of March, weather permitting. Verbenas, scarlet, Lord Raglan, Firefly, and Defiance; white, Mont Blanc and Boule de Nieve; Purple King and Celestial Blue also do well. The main point with these is to have strong, clean, healthy plants when put out. Ageratums, Imperial Dwarf and mexicanum, spring-struck if possible. Lobelias any variety. Some of the Nasturtiums make a nice show, such as King of Tom Thumbs. The Violas are also very useful. With these come the following useful ornamental plants, such as the invaluable Pyrethrum Golden Feather, Dactylis glomerata variegata, Centaurea candidissima and Clementei, Cineraria maritima, Stachys lanata, Cerastium tomentosum, Perilla nankinensis, ornamental Beet, &c.; and Iresine Lindeni may do well in some places. All kinds of Dahlias do well here; they must be securely staked and constantly watched. I might greatly extend this list, but if these are treated and used properly they will worthily repay whatever trouble and expense may be incurred.

Perhaps a few words on management may be acceptable. Firstly, then, the plants must be well hardened-off before being planted. If you have them to buy, procure good strong stuff at least a fortnight beforehand; put them in a sunny sheltered place, and cover with Shaw's tiffany every night, also in the daytime when very cold, and be careful they do not suffer from want of water. I mention this because I have seen plants brought from the nurseries and put out the same day into the beds. How healthy and beautiful they looked, but not for long. It was evident they had been under glass till their latest moments in the nursery, and at the first blast of a wind such as I have referred to the foliage is so injured that half the season is gone before they properly recover. Next, prepare your beds, if not previously done, putting in plenty of well-decayed stable manure or leaf soil, adding a liberal quantity of sand if the soil in the beds is of a stiff nature. After planting, which should take place not before the last week in May, give a good soaking of water; and as your garden is bleak and exposed, protect with tiffany, not by putting it on the plants, but in such a manner as to break the wind. I would not advise you to water often, unless absolutely necessary, but just sprinkle the foliage with a fine-rosed watering pot every evening succeeding a fine day, to wash off the soot.

Respecting Roses, we have tried them here, and if they have lived after the most kind attention it has only been to our disgust.

Of fruit trees we have some large specimens trained to walls and otherwise, but we never expect much produce from them, and therefore are never disappointed. They appear more as monuments, reminding us upon what kind of trees their respective fruits do grow. They consist of Pears, Plums, Apples, &c. The only advice I can offer is, Root-prune them next November, if this has hitherto been neglected; also have the wood well thinned-out, and keep them free from American blight, &c., which I find a little troublesome. Peas, as a rule, do pretty well here, considering.—R. SURTEES, *Gardener, The Quinta, Prince's Park, Liverpool.*

### THE CATHERINE PEAR.

I SEND you the enclosed extract from "Notes and Queries." Can you supply an answer to a question in which I am as much interested as the querist?—NOTUS.

"CATHERINE PEAR.—Suckling, in his 'Ballad upon a Wedding,' compares the streaks of red on the lady's cheeks to those on

—“A Catherine Pear,  
The side that's next the sun;”

and in the 'Schoolmistress,' Shenstone speaks of the lovely dye of the Catherine Pear. Is this Pear extinct, or has it only changed its name?

"Lavater tells us, we instinctively expect a handsome Apple to prove toothsome; but as the least comely Pears, so far as my experience goes, are generally the sweetest, one might suppose the Catherine Pear's charms to have been but skin deep, and hence to have lost their hold on popular favour, were it not that Shenstone declares its juice to have been equal to its dye. Will some Melibœus afford this immortalised fruit a note?—HENRY ATTWELL, *Barnes.*"

[When Suckling and Shenstone wrote, the varieties of Pears were very few when the list is compared with that containing now many hundreds. The Katherine Pear is not now to be found in any nurseryman's catalogue, nor anywhere except in old orchards, and there we met with it many years ago. It was ruddy on the side exposed to the sun, and when ripe the other parts were yellow. When ripe it was mealy and insipid, and at the best the juice was sweet and flavourless. It was probably introduced during the reign of Henry VIII., and named in honour of one of his queens. Parkinson, in his "Paradisus," published in 1629, describes it truthfully:—"The Catherine Pear is knowne to all I thinke to be a yellow red-sided Pear of a full waterish sweete taste, and ripe with the foremost."]

### THE WEATHER.

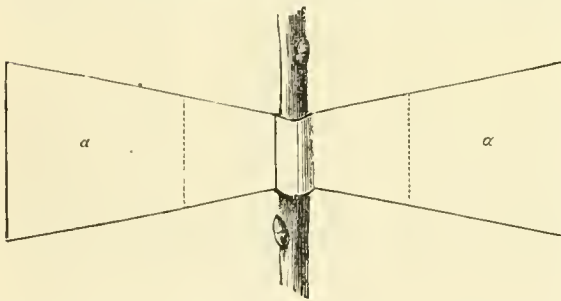
A good observer writing from Galashiels says, "We have wonderful weather. I saw at the Bridge of Allan, on the 6th inst., a Thorn hedge with fully expanded leaves, Clematis Jackmanni coming into bloom on the wall of a dwelling house, and the Chinese Pæony with the flower buds showing. Pear trees are nearly in full blossom. If frost come now it will play havoc. This leads me to assure you I never was more struck with a small invention than the alarm thermometer. My

eldest son acts as my foreman. He has a common thermometer outside his bedroom window, and with our great house frost is very ticklish, and he has to be constantly watching that it does not freeze while we have no fires on. When I get one of Mr. Bryson's instruments outside his window, and say it is set to begin ringing at 36° or 38°, so as to give time to get up steam before the temperature falls to 32°, he can rest at ease, for the bell never leaves off ringing till the temperature rises above what the instrument is set for, or until it is thrown out of gear.—W. T.

### INFLUENCE OF THE DWELLING.

IN reply to a correspondent, "A DORSET INCUMBENT," we can say, from long experience, we never knew a happy cottage home that was an untidy one, and that we fully agree with the Rev. Brooke Lambert who recently wrote:—"Your first endeavour should be to make the people take a pride in their surroundings, in clean floors, tidy walls, and bright windows. Don't forget those great educators of men—flowers. And in encouraging them to grow flowers, discourage them from the delicate hothouse plants, and the Roses which will not bear smoke; and press on them Musks, Creeping Jenny, ornamental Grass, Fuchsias, and that beautiful window green the Nettle Geranium. And then try and make them see that life is not so hopeless if only they will try and save. Tell them that so long as they spend all their earnings in drink, and lay by nothing for the future, you cannot help them. But if they will only try they will always find a friend ready to help. As you go on at your work you will begin to feel a respect for them, which will make you shrink from offering them money, as you would shrink from offering it to one in your own class of life, and your relations are yet such that in the case of great need you can go to them as to a friend and say, 'Don't be ashamed to borrow of me.' And as you see them struggle you learn the difficulties of their case, learn how harshly you judged them when you set them down as all belonging to one degraded class. You will find instances of kindness which make your eyeballs sore, of heroism which make you wish that you could in your own sphere go and do likewise."

Then for "the straggling, neglected Vine" our Dorset correspondent specifies, we agree with him that making staples of



Osier twigs and thrusting them under the tiles or slates is liable to loosen them, but there is a mode of training the Vine shoots over the roof without using such staples, and it was thus described many years since in one of Mr. Loudon's works:—"By following the undermentioned simple method the Vine may be trained easily on slating and tiling. In the winter pruning take pieces of tin 6 or 7 inches in length, the refuse of the tin-workers' shops will do, and at convenient distances turn them over the shoot intended to remain, and thrust part of the two ends (a a) between the tiles or slates. The weight of the incumbent tile or slate will be sufficient to keep the shoot in its place so as not to be disturbed by winds."

If "A DORSET INCUMBENT" induces his cottage parishioners to cultivate potted plants in their windows, and Grape Vines on their roofs, he will have gone far towards effecting his good purpose—"making his parishioners more home-loving."

THE SEASON IN THE SOUTH OF IRELAND.—I am sure that you will be surprised to hear the sort of a season we are having here in the south of Ireland. I have Pear trees (standards) in the open air in full flower, and my Apricot trees against a south wall are covered with a mass of bloom. Peas sown on the 16th of December are 3 inches high; Beans sown the same date

4 inches high. The Cherry wall is easterly, and the trees are showing their flowers.—WILLIAM RYAN, *Gardener to Mr. Early, of Donoughmore, Knocklofty, Clonmel.*

### WINTER BROCCOLI.

BROCCOLI, during the winter, is a rather precarious crop in some situations—so much so that if we were to plant a quarter of it we should probably be disappointed of a supply. There are gardens where Broccoli is almost a certainty, and, on the other hand, not a few in which after November it is the exception. Perhaps no vegetable degenerates more unless great care is taken in selection, and with early kinds there is a positive difficulty in saving the seed true. This must be apparent to all on considering what we get for early varieties such as the White Cape, Grange's Autumn, Penzance, Adams's and too often Snow's Winter White. After the great care in sowing, planting, protecting, &c., not unfrequently we have heads the size of a button Mushroom, or a big bunch of white or purplish green sprouts.

Broccoli culture in cold, wet situations, unless there be a few of the late hardy varieties, is frequently a failure. Where there is plenty of spare ground space can be allowed such precarious crops without much loss, but it is not so where every inch is absolutely required to supply the wants of the establishment. It is not new sorts that we want, but a more careful selection and saving of those we already have, and I fear that the worthless mixtures often sold are caused, in a great measure, by saving the seed of more than one variety in the same garden or field. Indeed, if within a few fields of each other, different varieties of Broccoli are sure to be cross-impregnated by bees or other insects. We need not, however, search long to find that Broccoli can be kept true and without degeneration. See what is done at Penzance and in its neighbourhood. Who has not seen the Cornish Broccoli and not wondered at its size and snowy whiteness? Yet it has been grown in that county for years without change of seed or soil.

If, again, we wanted proof that every Broccoli can be kept pure, we have it in the best strains of Snow's Winter White. I had almost given up the idea of growing Broccoli, so unfavourable is this locality—cold, wet, heavy soil, with a superabundance of atmospheric moisture, a night or two in which the thermometer falls 10° or more below freezing, and then comes a drizzling rain. But here is the point: It is not altogether the locality, but the worthless seed we have sent us. I have this year been gratified with row after row of Snow's Winter Broccoli, and every plant formed a head the size of a breakfast-cup or thereabouts, and that at a season when, of all others, a really good vegetable is highly appreciated—viz., on and after Christmas, and Broccoli above all vegetables is welcomed then. I have not been one week without Cauliflowers or Broccolis since the beginning of June, and now we are just commencing with another valuable Broccoli—viz., Veitch's Spring White. This, with one or two others, will carry us on to within a week or two of early Cauliflowers. This is a very late garden, or probably we should have Cauliflower before the last Broccoli was cut, as we have before now.—JOHN TAYLOR, *Maesgwynne.*

### PEACH FORCING.

I NOTICE in page 116 a letter on the above topic from my worthy friend Mr. Taylor, and beg for a short space in reply.

I understand Mr. Taylor to say that Peach houses, shut up at the beginning of December and kept at 45° to 50°, will now (first week of February), be in full flower. My first Peaches were shut up on the 10th of December, and I enclose you a shoot with the fruit attached, so that you may judge for yourself. I may remark, when I begin to force Peaches or anything else, I like to force in the proper sense of the word. I maintain that Peaches will set better at 55° to 60° than at 45° or 50°.

The general treatment our Peaches have received is of the simplest kind—merely to keep the house at 50° until the flower can be seen to show the colour, raise the temperature to 55° until the flower is fully developed, then keep steady at between 55° and 60°. The paths and borders have been duly syringed daily whilst setting, and the trees syringed every day before they came into flower. Now, respecting fertilising the blossoms, I may say that I have practised it for years, and with

fair results. However, I have three more Peach houses, and will certainly give Mr. Taylor's plan an impartial trial.

With the latter part of Mr. Taylor's letter respecting thinning I altogether disagree. Whether good gardening or not, I always, if possible, play a surer game, and one that has for thirty years served me well—allow plenty of fruit to remain until you see the second swelling commences, and then, but not until then, thin to the proper distance apart.—R. GILBERT, *Burghley, Stamford.*

[The Peach branch sent by Mr. Gilbert (Feb. 11th), was a foot in length, and had on it twenty Peaches, each the size of a medium pea.—Eds.]

## A CENTURY OF ORCHIDS FOR AMATEUR GROWERS.—No. 20.

### PLEIONE.

THIS, popularly known as Indian Crocus, is a small genus often included in *Ceologyne*, but abundantly distinct. Naturally the species grow upon the branches of the forest trees, and as they bloom without their leaves, they are said to set the trees all ablaze with their bright-coloured flowers. The fact of their blooming without foliage has caused many to lodge complaints against them, and to assert this completely spoils the effect. Where there's a will there's a way, however; and as I am of opinion *Pleiones* never are fully at rest, there is nothing to prevent a few plants of such subjects as *Nephrodium molle* and some other erect-growing Ferns being planted in the pots just when the leaves begin to fade, and by the time the flowers expanded the Ferns would compensate for the loss.

*Pleiones* should be grown in pots in a mixture of rough peat, sphagnum moss, and old dried cow manure. The pots should be well drained. During the growing season they enjoy an abundant supply of water, and when the leaves begin to change colour water should be withheld to some extent; but when the flower buds at the base of the pseudobulbs begin to show signs of moving, a little extra water may be given.



*P. humilis.*

*P. WALLICHIANA.*—This species is also known by the name of *præcox*; it usually flowers from October to December. The blooms are large and very handsome; sepals and petals deep rosy purple, the lip of the same colour, with the centre white. Native of the Himalayas.

*P. MACULATA.*—In habit this plant is similar to the preceding; and it blooms at the same season; sepals and petals pure white; lip white, beautifully streaked with purplish crimson. Native of Assam and Khasia.

*P. LAGENARIA.*—Undoubtedly this is the most beautiful of the kinds yet introduced, the habit of growth is like the preceding; all of them, however, have some slight differences in the shape of their pseudobulbs. Sepals and petals soft mauve; lip veined and blotched with rose and brilliant crimson. Native of Nepal and Khasia.

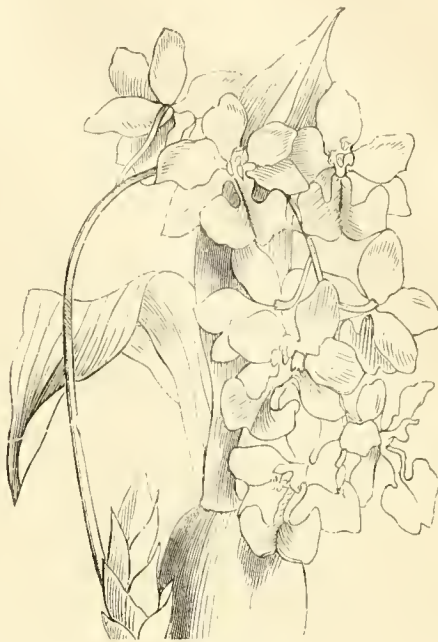
*P. HUMILIS.*—In the shape of the pseudobulbs this is the most distinct of the species here enumerated. Flowers large; sepals and petals bright warm rose; lip white, streaked and spotted with crimson. Native of Khasia.

### ODONTOGLOSSUM.

In the first half of my task I detailed the treatment

necessary for these plants; the two species here mentioned, however, have been found to enjoy a little more warmth than most of their relatives.

*O. CITROSMUM.*—The pseudobulbs and leaves of this species are bright shining green in colour; the spikes are pendulous, bearing numerous pure white flowers; in some varieties the lip is tinged with soft rose. This species is, perhaps, more correctly named *O. pendulum*. It enjoys good exposure to the sunlight. Native of Mexico.



*O. citrosmum.*

*O. PHALENOPSIS.*—A very dwarf-growing and handsome species, producing small pale-coloured pseudobulbs and light green leaves. The spikes has two or three large, flat, and very handsome flowers, which last a long time in perfection; sepals and petals pure waxy white; lip white, with a large blotch of purplish crimson extending over the greater portion, but leaving a pure white border. Native of New Grenada.

### TRICHOPILOIA.

With one species of this genus I shall bid adieu to my readers on this subject for the present; but if the Editors of our Journal will sanction it, I have no doubt there will be something for me to say upon those species and varieties omitted in this enumeration.

*T. CRISTA.*—Is at once a dwarf, compact, and handsome plant; the pseudobulbs are somewhat stout, and bear a single dark green leaf; the spike has from two to three large flowers of a light reddish crimson, saving the sepals and petals, which are edged with white. It blooms twice in the year, and lasts a long time in beauty. The treatment recommended for *Cattleyas* suits it admirably. Native of Central America.—EXPERTO CREDE.

## THE VALUE OF FUEL.—No. 3.

WHATEVER the medium through which the heat of the fuel is conveyed into the house, it is of the first importance that the extent of surface provided for its diffusion should be ample. In the case of flues it is well to have the part nearest the furnace of double thickness, by which means there is less heat given off at first, and more preserved for the remoter end of the house. It is also very advisable to make the flue area smaller near the furnace, both because the gases must then pass more quickly where they are hottest, and consequently have less time to cool, and because there is thus a great security against their escape through the joints or cracks of the brickwork, it being, of course, understood that the chimney through which their final exit is made is of not less internal area than any part of the flue. When this is the case

there is a suction going on through the whole length, which will draw in the air through any fissure; whereas, if the exit is contracted and the throat of the furnace large, there is a forcing of air into the flue, which seeks its way out wherever it can find an opening. Attention to this principle would cure a large proportion of smoky chimneys.

But although water neither allows gas to escape nor can become heated above  $212^{\circ}$ , there is also in its use necessity for ample extent of pipe. The temperature even of  $212^{\circ}$  is too hot, and causes a certain deterioration of the air. Probably  $150^{\circ}$  is the utmost consistent with salubrity. Further, if the pipes become heated nearly to their full extent, there is trouble with escape of steam, diminution of water, incrustation of the boiler, and finally a considerable chance that fuel may be wasted, because more is burned than the water can cool. But, subject to attention to this rule, water presents great advantage for the transmission of heat on account of its high specific heat—*i.e.*, the large amount which it absorbs for each degree of rise of sensible heat, and gives off again in cooling for each degree of loss of sensible heat. Weight for weight, it thus absorbs and gives off fully four times as much heat as air, and bulk for bulk nearly three thousand times. Hence a pipe containing hot water will give off three thousand times as much heat as the same pipe containing hot air, or, in other words, will convey the heat three thousand times as far with the same loss. Brickwork being a much worse conductor of heat than iron (in about the proportion of 1 to 3), and a brick-on-bed being thirty or forty times the thickness of an iron pipe, while a flue is generally four to eight times the area of a pipe, the difference is partly compensated; but it may still be reckoned that a flue will only convey its heat to one-fourth or one-sixth the distance that a hot-water pipe will.

Before dealing with the actual amount of fuel which is required for heating various structures, it is necessary to determine what proportion of the total heat evolved may be fairly considered to be available in practice. The tables on p. 115 show the amount produced by each fuel, and, as already observed, the waste is but trifling when the fuel is burned within the structure to be heated, or when the heat produced is abstracted through a sufficient prolongation of flue. When the fire is in a stovehole, it would not be difficult in general to make the ventilation of the stovehole pass through close stone pipes led within the house to be heated, and in this way a large amount of waste might be economised. If, then, care is taken to save as much of the heat as is possible, we may reckon that a deduction of ten per cent. ought to be ample to cover the total waste. The amount requisite to produce a draught in the chimney is too trifling to require notice. I have found by experiment that a temperature of  $40^{\circ}$  above the air in a chimney 15 feet high occasions a sufficiently strong draught, and a temperature of  $70^{\circ}$  above the air a fierce draught. Now, for the combustion of each pound of coal about 20 lbs. of air, equal to 270 cubic feet, are requisite, allowing, as is found to be the case, that only half the oxygen in the air combines with the fuel. The heat of these 270 feet on passing through the fire would be about  $2500^{\circ}$  Fahr., and therefore, if the temperature of the chimney is  $60^{\circ}$  above the external air, the allowance of heat necessary to ensure a very powerful draught is under one-fortieth part of the total heat generated by the fuel. I propose, therefore, in the following calculations to assume that coal ought to give 12,000 units of available heat to the structure which is to be warmed. And it is, of course, understood that 12,000 lbs. of water raised  $1^{\circ}$  is exactly the same thing as 6000 lbs. raised  $2^{\circ}$ , or 1000 lbs. raised  $12^{\circ}$ , and so on. Now, 12,000 lbs. of water are equal to nearly 192 cubic feet; but the heat absorbed in raising water  $1^{\circ}$  is sufficient to raise 3000 times (very nearly) the like bulk of air  $1^{\circ}$ ; consequently the heat yielded by 1 lb. of coal will raise 192  $\times$  3000, or 576,000 cubic feet of air  $1^{\circ}$ . So much for the quantity of air that can be heated by 1 lb. of coal.

Now for the cooling. Let it be kept in mind that air would remain stationary in temperature unless the heat is allowed to pass off, and it will be seen that its absolute loss of heat does not depend on its bulk, but upon the nature of the media by which it is surrounded: hence the common method of estimating heating power by so many feet of pipe required for so many cubic feet of contents of the house is only a rough-and-ready way of approximating to the extent of cooling surface by which the air is surrounded; but it is more accurate to take the cooling surfaces directly. The experiments of Hood have shown that each square foot of glass cools about  $1\frac{1}{2}$  cubic foot of air as many degrees per minute as the external tempe-

rature exceeds the internal. If this excess is  $1^{\circ}$ , then 1 square foot of glass cools  $1\frac{1}{2}$  cubic foot of air  $1^{\circ}$  per minute; or 160,800 square feet of glass will cool 576,000 cubic feet of air per minute, which, as we have seen, is the quantity of air that 1 lb. of coal will heat  $1^{\circ}$ . Therefore 1 lb. of coal burned per minute will supply the heat lost through 160,800 square feet of glass; or dividing by 60, 1 lb. of coal burned per hour will supply the loss of heat occasioned by 7513 (say, for convenience, 7500) square feet of glass in the same time, when the external temperature is  $1^{\circ}$  below the internal. For any other difference of temperatures we must divide 7500 by the number of degrees of difference to obtain the surface of glass which 1 lb. of coal per hour will heat. For any different superficies of glass we must divide 7500 by it to obtain the degrees of heat above the external air which 1 lb. of coal will maintain; and for any additional consumption of coal per hour we have to multiply either the degrees of difference of temperature, or the superficies of glass, found as above, by the number of pounds of coal to be burned per hour to get either the temperature that will be maintained in a given structure, or the extent of structure that will be maintained at a given temperature.

We may express these rules algebraically in the following equations. Let  $C$  be the number of pounds of coal to be burned per hour;  $D$ , the difference of external and internal temperature in degrees; and  $S$ , the superficies of glass in square feet. Then

$$(1.) C = \frac{DS}{7500}, \quad S = \frac{7500C}{D}, \quad D = \frac{7500C}{S}.$$

From which, when any two of the quantities  $C$ ,  $D$ , and  $S$  are fixed, the third can be found. Or, in words: To find the coal required to keep a given structure at a given difference of temperature, multiply the superficies of glass in feet by the proposed difference, and divide by 7500.

To find the superficies of glass which will be maintained at a given difference of temperature by a given quantity of coal, multiply the pounds of coal per hour by 7500, and divide by the intended difference of temperature.

To find the difference of temperature that will be maintained in a given structure by a given quantity of coal, multiply the pounds of coal per hour by 7500, and divide by the superficies of glass in feet.

These rules are quite independent of the manner in which the heat is conveyed or applied in the structure, whether by Arnott stove, flue, or hot-water pipes, provided only the arrangement be such as to yield twelve parts of the heat of coal, which, when burned, gives thirteen to sixteen parts. If the coal be of very inferior heating power it may be proper to use 7000 instead of 7500 for a constant. The same rules also apply to other species of fuel, substituting a different constant in place of 7500. This constant may be obtained by multiplying 7500 by the units of heat belonging to the fuel in question (less ten per cent. for waste), and dividing the product by 12,000.

In computing the superficies of glass the woodwork may be included as a sort of set-off against the extra loss of heat through the laps of the glass. The loss through the back and front walls of lean-to houses must also be considered, but it is reckoned by Dr. Arnott at only one-twentieth of that of glass; but, on the other hand, it is important to remember that the effect produced by coal in the foregoing calculation is that for extreme low temperatures in sunless weather, and in comparison with the temperature of an unheated greenhouse. The night temperatures will always be by fire heat in excess of what has been shown, because as, even in cloudy weather, the day temperature of the air is almost always  $10^{\circ}$  to  $20^{\circ}$  higher than the night, there is bottled-up in any glass structure, in the soil, and walls, an amount of heat in the day which is slowly given off at night, and which to that extent diminishes the amount of coal required at night to maintain a given temperature. Gardeners are familiar with the saving of coal effected by early closing in sunny days, and a like saving accrues in a less marked degree even on sunless days. The formula given above must therefore be taken as the extremes that can be required by firing alone, in protracted periods of sunless weather, of uniform temperature. In such conditions I have found them hold good in practice.

The next point is to ascertain how many feet of (say 4-inch) pipe are required in order to convey and transmit, through the water to the surrounding air, the amount of heat produced by 1 lb. of coal per hour. Now, it may be deduced from Hood's researches on the rate of cooling of iron pipes that 1 foot in length of 4-inch pipe, which contains 150 cubic inches of water, weighing 5.425 lbs., loses  $681^{\circ}$  per minute, or  $40.86^{\circ}$  per hour,

when the water is 100° above the temperature of the surrounding air. But as 1 lb. of coal raises 12,000 lbs. of water 1°, it will raise 5·425 lbs. (that is to say, the water in 1 lineal foot of pipe), 2201°, or the water in 55 lineal feet 40·86°. Hence 1 lb. of coal per hour will keep 55 feet of 4-inch pipe at a steady temperature of 100° above the surrounding air, or 5500 feet 1° above the surrounding air. Then, if we take  $p$  to represent any different length of pipe, and  $d$  to stand for any other difference between the temperature of the pipe and of the air in the house, we shall get the following equations, corresponding to those given for the heating of air,

$$(2.) p = \frac{5500C}{d}, \quad d = \frac{5500C}{p}, \quad C = \frac{pd}{5500}.$$

The first of which may be expressed in words thus:—

To find the length of pipe which a given number of pounds of coal per hour will maintain at a given temperature, multiply the pounds of coal by 5500, and divide by the difference between the heat the water is intended to be kept at and the intended heat of the house.

The other formulæ may be reduced into words in like manner.

Finally, if we wish to express any one of the quantities  $p$ ,  $d$ ,  $D$ , and  $S$  in terms of the others, by taking from the formulæ (1) and (2) the common value of  $C$ , and equating, we obtain

$$(3.) p = \frac{5500DS}{7500d} \text{ nearly; } d = \frac{11DS}{15p}, \quad D = \frac{15dp}{11S}, \text{ and } S = \frac{15dp}{11D} \text{ nearly.}$$

The first of which formulæ may, for an example of the rest, be expressed thus:—

To find the length of pipe which, at a given temperature of the water, will heat a structure having a given superficies of glass to a given temperature, multiply the superficies by eleven times the intended difference between the outside and inside temperatures, and divide the product by fifteen times the intended difference between the heat of the water and the air of the house. And having thus found the value of  $p$ , if we substitute it in the equation  $C = \frac{pd}{5500}$  we shall get the quantity of coal necessary to give the desired result in the given conditions.

The data on which these expressions and rules are founded are well known; but the method of deriving them and the formulæ for calculation are, so far as I know, new, and may therefore have admitted error. I shall therefore be glad if any of your correspondents will kindly point out any mistake they may discover. Subject to such correction, the formulæ will be found very useful in adapting heating apparatus to any new structure or in testing the performance of any existing arrangements.—J. BOYD KINNEAR.

### TO YOUNG GARDENERS ON RENOVATING OLD FRUIT TREES, AND OTHER SUBJECTS.—No. 3.

It is from youthful vigorous trees that we must remove large branches and roots. I am well aware that large trees when in sound health and favourably situated will bear the removal of large limbs without apparent injury, and the wounds will heal rapidly; but such amputations often lay the foundation of decay. This also arises in many cases from the roots being in a cool wet subsoil, where the central ones become decayed, and the evil gradually extends to the body of the tree. To head-down a tree in such a condition for grafting, or to form a new head, or even to cut off any part with the object of improving the tree, will only end in disappointment. In all such cases it is well to consider whether it is not advisable, if the tree can be spared, to at once replace it. If this is not to be done, let the large branches alone, but thin-out the small ones, and remember that the roots play an important part in restoring vigour.

If much younger trees are not thriving or have been neglected, and it is thought necessary to head-down or cut back for grafting, yet if the roots are in difficulties, the foliage of the young wood from the grafts will in a year or two assume the appearance of having been plated with silver, be turned to a glossy milky colour, or in other cases to a sickly yellow. I have seldom seen such trees recover if not taken in hand immediately. If left for a year or two they may be at once removed, as they will never do any good. We should secure a stock of young trees to take their place—not mere maiden trees, but those of four or five years' growth, which may be

expected to bear some fruit at once. It is somewhat strange that it is quite possible a tree may present no sign whatever of unnatural-coloured leaves before the branches are cut off, although in cool subsoils combined with almost sunless aspects, such as north borders, we find single branches assuming this character; cut them off, and the like will appear again. It is an unmistakeable sign that all is not right at the roots, and the sooner these are brought near the surface in new soil the better. To head-down such a tree with its organisation so disordered would be folly. Until its foliage appears in its natural character it is best to ease-off any outlying branches, and carefully lift the roots and remake the border.

Cutting off large branches is a frequent means of bringing this disease about with certain varieties, the sudden shock to the whole system being more than the tree can endure. I will give an instance. From a young Morello Cherry tree in a north border it was deemed necessary to take the centre branch; before doing this the tree was, to all appearance, in the very best of health, yet the following summer it produced this unnatural-coloured foliage and refused to grow an inch. In another case some, to all appearance healthy, bush Apple trees were headed-down and grafted; they made rapid growth and formed nice bushy heads, yet in the third year they, too, had this sickly hue and ceased to grow. In this instance the position was the reverse of that in which the Cherry was planted, but the subsoil was bad, and the surface soil unfavourable to fruit trees. These are not solitary cases; I have witnessed hundreds similar, and I contend, like Mr. Müller, that more trees are destroyed by the amputation of limbs than all other causes put together. I have always found that trees on a dry open subsoil bear severe pruning better than those on cool soils, but would advise that on no occasion whatever, if a tree is to continue to be prosperous for any considerable time, should large branches be sawn off—for instance, branches of 6 or 8 inches in diameter. Any large wound which may be made should be immediately covered with a waterproof composition to preserve it from the action of the atmosphere and from insects.

There is a right and a wrong way of cutting-off limbs. Almost invariably we see trees headed-down with the branches severed horizontally, forming a receptacle for all noxious substances to penetrate into the wound. Avoid this at all times, and always cut in a vertical direction. I am of opinion that there are certain ages beyond which trees cannot have their heads or limbs taken off with any chance of the wound healing over. In every garden and orchard may be seen clumsy wounds left from 3 to 6 inches from the main stock or branch, and the decay can be traced passing downwards without the least effort on the part of the surrounding bark to cover the wound; the tree gradually sinks, and at last refuses to produce even a leaf.

I remember that about twenty years ago some orchards were to be converted into market gardens. Many of the trees were large, sound, and vigorous, but bore small useless fruit; they were headed-in, but not closely, and grafted well on to the tops of the branches, placing in many instances on one tree from 150 to 200 grafts of the best-bearing varieties, which were generally of slow growth. Immense crops were produced for a few years, then the foliage assumed a sickly colour, and died. The trees paid well even at this time, and, of course, young trees were growing up to take their place in filling the baskets for market. This is just what ought to be done in private establishments. It was evident, however, that the union between the stock and the scion was never a happy one from the first. The grafted trees made vigorous efforts to replace the limbs which had been cut off by pushing every hidden eye into growth, and if these had been allowed to appropriate the abundant supply of sap sent up by the roots, I have little doubt the trees would now be in a healthy state. In support of this view I may state that the trees which were grafted with stronger-growing varieties are to this day as vigorous as need be, and this I ascribe to the heads being capable of elaborating the abundant supply of nourishment provided by the roots, and returning to these all that was wanted to support the underground working power. In the case of the slow-growing varieties placed on strong-growing stocks there was no such balance, as for the large supply of crude food sent up by the roots there was no machinery to elaborate it properly: hence decay set in. In heading-down a large tree, then, would it not be advisable to shorten the roots at the same time, in order to preserve the balance, or make it incline to whichever side we wish? Thus, if we want to render the head more vigorous we encourage the

roots, reduce the crop, and displace old wood with young; but if the object is to diminish vigour and produce more fruit, go at once to the roots and shorten them.

In the article on this subject, page 51, second column, the words, "The whole economy of the tree is disordered," should be omitted.—J. TAYLOR, *Maesgwynne*.

### BALSAM CULTURE.

THERE are few plants grown for the decoration of the conservatory or show-house that are more beautiful than the Balsam. Very pleasing is their combination with other choice plants, being graceful in outline, with a profusion of soft-tinted flowers relieved by an abundance of delicate foliage. They are easy of culture; their flowers have a delicate perfume, and where a constant display is required, they are of great value to the gardener. They should be grown about 2 feet 6 inches to 3 feet in height, and about 20 to 24 inches through, and as vase plants or for the dinner-table they have few equals. I usually sow in the first week of the new year, and about every two months up to June or July to keep up a succession. A suitable compost is good fibry loam, leaf mould, and old decayed cow dung and silver sand. It ought to be borne in mind that few plants suffer more from any sudden change of temperature than the Balsam, therefore the compost should be warmed. It is best finely sifted; give good drainage; cover the seeds about an eighth of an inch deep, and plunge the pots in a gentle bottom heat; then water sparingly till the plants appear, when they must be well exposed to light. As soon as they have made their second leaves transplant them into large 60-pots, the pots being first placed in the house to get warmed (if not new, they must be well washed), for the Balsam is very susceptible of injury from damp or cold, although not requiring a high temperature to grow it successfully. In potting, great care is required to separate the plants carefully so as not to injure the roots, and not to press the soil too firmly so as to bruise the soft stems of the plants; cover the stem up to the seed leaf. They require to be shaded for a few days till their roots get hold, after that shading may be discontinued, and the plants exposed to the air and light. The water applied should be tepid, and liquid manure frequently given them. The more liberal the treatment the stronger the growth. Never allow the plants to want for water, but give it them according to growth. A suitable temperature is 72° to 75°, and on sunny days they will take no harm at 80°.

The bottom branches should be kept pegged down to the surface of the pots. As soon as they have filled the pots with roots they must be repotted. Never allow them to become pot-bound. I pick the flowers off till they are of the size required. The pots must be shifted into a cooler house before being placed in the conservatory, so that they may not suffer from a sudden change. In the summer plunge them up to the rim in ashes in a pit. Last year I had them in bloom in February in the conservatory, and kept up a succession to the end of the season.—F. P. LUCKHURST, *Mill Bank Hall*.

### GREEN'S BOILERS.

IN the interest of those who are about to erect or change hot-water apparatus for plant structures, and wish to have the evidence of recent practical tests, we can add our own favourable testimony to that given by the Royal Horticultural Society, in its report, on the efficiency of Green's new wrought-iron boiler (saddle-fashion). It should be previously remarked that the boiler sent out by Messrs. Green & Son in 1869 and the present boiler are as dissimilar as possible; the improvements carried out in the latter constitute it one of the most effective apparatus ever offered for horticultural purposes.

The large one now at work in our establishment is 4 feet 6 inches in length, 4 feet 6 inches in height, and 2 feet 4 inches in width; heating most efficiently 3393 feet of 3 and 5-inch piping, part of which is 240 feet from the boiler, and a considerable extent of it is 200 feet distant, whilst its present power is such as to warrant in milder weather an average circulation of 5 to 800 feet further in extent. This boiler admits of 80 square feet of heating-surface fully exposed to the action of the fire, which acts on four flat water plates across the boiler, each plate being 2 feet in width by 4 feet in length, the collective heat being utilised within the boiler without waste in the flue or chimney, thus heating a greater extent

of surface than any other boiler yet known to us. Amongst its advantages are the following:—When placed in the usual recess under cover it requires no brickwork in setting. In the event of any injury or accident the boiler can be removed by an efficient workman, without interfering with the bottom tubular bars, and be replaced with another in nine hours.

These very important features have served to displace the upright tubular boiler in favour of the present one, the former being found impracticable to repair within a period of safety, and otherwise involving a very considerable risk and expense. Having had to remove two of the upright tubular boilers in consequence of fracture, and each involves a whole week to replace, it will on comparison be readily inferred that our present boiler is really a boon to horticultural establishments. With the upright tubular boiler connected with the same extent of piping we never average more than an intermediate temperature, falling far short of the heat required when most needed; whereas in our present boiler we find no difficulty in maintaining an average hothouse heat.

As a proof that Green's boiler utilises the whole heat without waste, the flues leading to the chimney are nearly cool in comparison with other boilers in full work. The flues formerly required special precaution to be taken to avert danger by the waste heat rushing along the flues and passing through lofts where hay and mats were stored for convenience; this risk is now entirely removed by the waste heat being duly turned to its proper account. We calculate that this boiler does its work cleverly and uniformly with two-thirds of the fuel required for the No. 5 upright tubular, which this replaces, and a still further important saving is effected by its fuel not being restricted to coke; such is the equable power of its combustion that the fire burns equally briskly with a general mixture of clay mixed with cinders or other combustible garden refuse. Having a large bed of extracted clay contiguous we feed our fires with it throughout the day, and bank-up with coke at night. Being formed with water bars, the fire chamber is not encumbered with large clinkers, neither is the fuel subject to hanging up as in some other boilers: hence it is far more readily cleaned, and by its equable combustion can be safely left for a length of time without risk of check in circulation.

This boiler is found superior to any other yet used by us; its special merits being quick circulation, economy in fuel, sustained power, and adaptation for immediate repair or replacement under any possible exigency. We have four of these boilers alike efficient in their working, and we shall have pleasure in showing the apparatus at work to any gentleman amateur, or gardener.—E. G. HENDERSON & SON, *Wellington Nursery, St. John's Wood*.

### NOTES BY THE WAY.—No. 2.

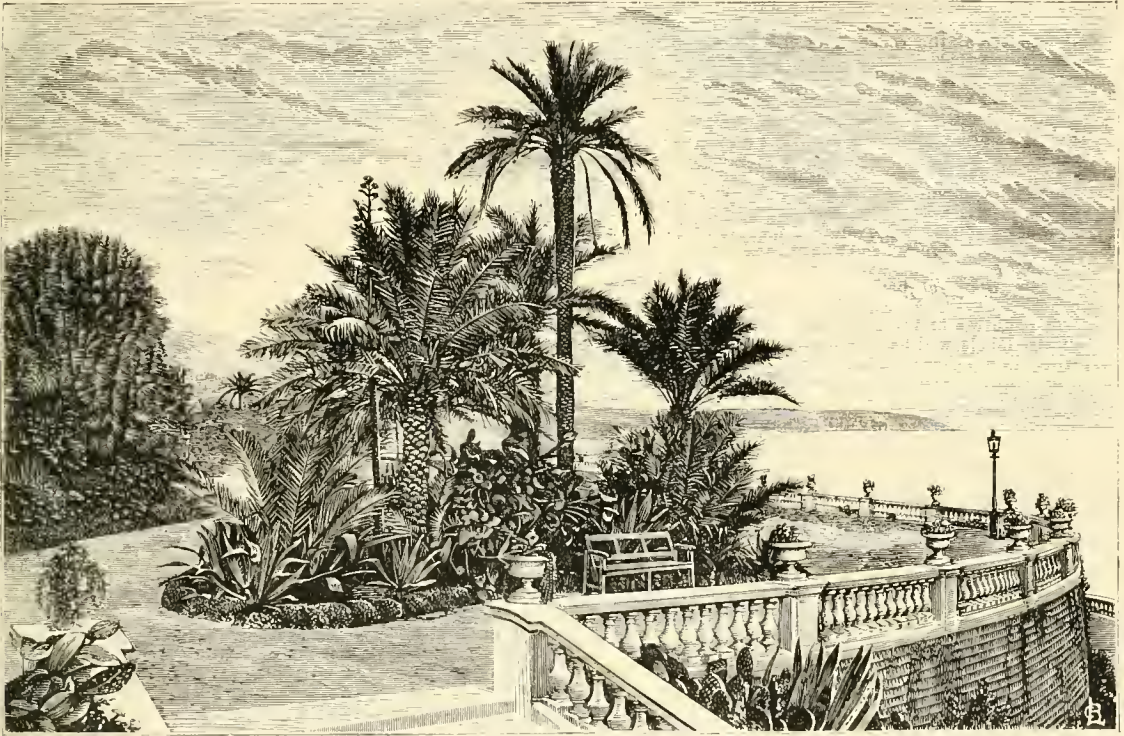
It was a bright frosty morning when I left Lyons on the 9th of this month (January) and turned my face southward by the railway to Marseilles. It was not long before the train entered the grand valley of the Rhone, not now smiling with rich verdure and luscious fruits, as I have often seen it before, but shrouded in a garment of white, indicating that for a time nature was dead, only to spring into the renewed life which is sure to follow. The Vine-dressers were busy with their *serpettes*, cutting-out the last year's wood and binding it into little bundles for fire-kindlers. Those of the Mulberries which required pollarding were undergoing that operation. I do not mean the black-fruited Mulberry, but the white, which is grown for its leaves to serve as food for the silkworm; for, be it remembered, we are now in the region of silk, and here in this fertile valley is it produced in large quantities all the way down to Marseilles and Montpellier. The trees are just like pollard Willows, the object being to obtain as strong shoots and vigorous leaves as possible, and this can only be done by cutting-down the large branches and inducing a strong young growth. How the old grey rocky steeps reflected back the bright light of a glorious sun, which accompanied us all the way till we passed Montelimart! and then he went down under the hills of Ardèche, leaving us in darkness all the way to Marseilles. It is a grand sight, the valley of the Rhone, either in summer or in winter, but in winter especially it looks stern and severe, fenced-up as it is on either side by the rugged and almost precipitous mountains of grey rock; but these in summer, where terraces have been formed, are smiling with fruitful Vines. The Alps, sensibly near by the cold air they diffused as we approached them, were covered with snow, which the declining sun lit with a varied beauty. After passing Orange and Avignon

there was a perceptible change in the temperature, which improved as we got nearer Marseilles.

On the following morning, when I turned-out of the Grand Hotel Noailles to see the changes that had taken place in the old city since last I saw it many years ago, I was struck by the extreme mildness of the temperature; and thinking a change had taken place in the night, I remarked to the porter that it had become very mild, at which he shrugged his shoulders and rather differed in opinion from me. I asked how long this had lasted, and he said all the winter, but that they considered it rather disagreeable than otherwise, for they usually had it much warmer than this. I was convinced now I was nearing the subtropical region I had so longed for. In the entrance hall of the hotel the sides were lined with large tubs planted with *Euonymus japonicus* in full fruit, handsome plants 6 feet

high. In the market were an abundance of Artichokes, and I observed plants ornamented with paper flowers of various colours, much in the way that the small Spruce Firs were at Lyons with the dyed flowers of *Xeranthemum annuum*. I did not make any stay in Marseilles through a desire to terminate my journey, which had now become very tedious, and I shall endeavour to see something or anything in the way of gardening that I may consider worth notice on my return homeward.

From Marseilles the railway into Italy is a single line, and its course is all the way close to the shore of the Mediterranean, sometimes through narrow passes of bold rocky alpine scenery, from which it emerges at intervals again to afford a full view of the sea. All the way to Nice there is little to be seen in cultivated grounds but Vines and Olive trees, with occasionally the White Mulberry, indicating that silk is produced, and the



VIEW FROM THE GROUNDS OF THE CASINO AT MONTE CARLO.

hills are covered with *Pinus maritima*, *P. halepensis*, and Evergreen Oaks. Between Toulon and Cannes I observed considerable plantations of the *Gnaphalium*, the flowers of which are dyed for "everlastings," and of which the "immortelles," now become so common among us, are made. I had no opportunity of examining it closely enough, but I believe it to be the *Gnaphalium margaritaceum*. It is grown in the fields in the same way as Lavender is grown by our herb-growers at Mitcham and Hitchin. When we got to Cannes the aspect of vegetation began to change. Oranges appear; and here and there between Cannes and Nice we see specimens of the Date Palm. These become more numerous as we proceed on the journey, until, reaching Monte Carlo, they become quite the leading feature in all effects produced by the landscape gardening of the district. Monte Carlo, which is a suburb of Monaco, and where the only remaining gaming tables in Europe are to be found, is one of the most charming spots that can be conceived of. The grounds attached to the Casino have been very artistically laid out; and here it is that the Palms are to be seen in their best condition, as ornamental trees. Our figure will give some idea of the style of gardening which has been followed. But it is at Bordighera, a few miles beyond Mentone, on the Italian frontier, where these Palms are grown to a large extent, and whence the supplies of Palm branches are derived with which Rome is supplied for the services on Palm Sundays.

When I looked from my bedroom window of the Hotel de la Mediterranée, at Mentone, on the morning after my arrival, what a new and marvellous sight presented itself! Close upon the town there is a range of steep little hills, richly clothed with vegetation, which have been girdled with numerous terraces one above the other, and studded with smiling villas in every variety of fancy forms, each standing in a garden of Orange and Lemon trees. The trees are groaning under the load of the golden fruit, the crop of which is now ripening, and in some cases this is so great as to require props to support the branches. Such a sight is like a transformation scene. Away beyond these little hills there rise, by a gradual succession of waves of rugged rock, still higher grounds also terraced, wherever a modicum of soil can be obtained wherewith to make Orange and Olive groves. The soil is rich where there is any, and nothing so exemplifies the patient industry of these hard-working Ligurian people than the fertility with which they have clothed these apparently barren hills, and this process goes on higher and higher still till it reaches, as at S. Agnese, a height of nearly 2500 feet. S. Agnese is one of a group of these high peaks which form a range of mountains enclosing Mentone from the north, and protecting it from the cold winds coming from the Alps in that direction, and the spurs of these mountains form a barrier on the east and west, so that by this shelter from all the worst winter winds that blow has, with its fine pure air, warm climate, and

sea influence, rendered this little town the health-giving blessing it has been to many.—R., *Mentone*.

### PRIZES FOR DISEASE-PROOF POTATOES.

The following are the prizes and conditions upon which the Committee of the Royal Agricultural Society recommend the £100 offered by Lord Cathcart last year for essays on the Potato disease, and which was not awarded by the Committee, to be applied. We give them in full in order that our readers may be supplied with the information requisite for an intending competitor:—

I. The Committee recommend the offer of the following prizes—(1) For an early Potato, which shall be disease-proof during three years' trial, and possess the best cropping, keeping, and cooking qualities, £100. (2) For a late Potato, which shall be disease-proof during three years' trial, and possess the best cropping, keeping, and cooking qualities, £100.

II. They also recommend that an additional sum, not exceeding £100, be placed at the disposal of the judges to divide at their discretion in prizes to disease-proof Potatoes in the above classes not obtaining either of the foregoing prizes.

III. They further recommend that prizes of the same amount as the preceding be offered for disease-proof Potatoes raised from seed to be sent in for competition during the month of February, 1879.

The Committee had drawn up the following conditions, which they recommended should be attached to the offer of the foregoing series of prizes:—

Each competitor must send 1 ton of each sort of Potato with which he intends to compete, in twenty bags containing 1 cwt. each, so as to be delivered at a warehouse provided by the Society not later than February 24.

Each bag must have a parchment label attached, giving both the name and address of the competitor and the name of the Potato. These labels will be removed by the Secretary of the Society, who will see that each bag is legibly stencilled with the number which will be assigned by him to the competitor.

One hundredweight of each kind of Potato sent to compete will be forwarded to a Potato-grower in each of the several districts of the United Kingdom as follows:—North Yorkshire, South Yorkshire, Cumberland, Fylde district of Lancashire, Marsh district of Lincolnshire, Essex, Higham district of Kent, Devonshire, Staffordshire, Bedfordshire, South Wales, North Wales, Morayshire, Perthshire, the Lothians, Renfrewshire, Ulster, Connaught, Leitrim, and Munster.

Each Potato-grower will be instructed to plant the competing kinds of Potatoes in the same field with his own Potato crop in adjacent plots, carefully keeping each sort distinct, and submitting each to precisely the same treatment as his ordinary crop. He will also be instructed to keep a careful and precise record of every event connected with the growth of the experimental Potato crops, including the dates of all agricultural operations, the quantities of manure applied, with the time of application, the appearance of the several plots from time to time, notes of the weather, and other information connected with the growth of the crop. Books prepared for this purpose will be furnished to each grower by the Secretary of the Society.

The crops will be carefully harvested, and weighed in the presence of a representative of the Society; each kind will be carefully kept separate, and thoroughly examined for diseased tubers. The proportion of diseased tubers, should any be found, will be carefully noted. The crops yielded by the competing kinds of Potatoes will be the property, and at the disposal, of the Society; and the growers will be paid for the use of their land, cost of manure, tillage operations, and all other accommodation at a price to be previously agreed upon.

The trials will be repeated next year with the produce of the competing kinds that may be found to resist disease on all the experimental plots this year; and similarly they will be repeated in 1876, with the produce of those that have resisted disease in the two previous years. The awards, if any, will be made early in 1877.

The judges will be instructed not to award any of the prizes except to the owners of competing kinds of Potatoes that are found to resist disease during the whole of the experimental period of three years.

Every competitor, whose Potatoes shall be attacked by the disease during the experiments, may be required to pay such sum as the Council may determine, not exceeding £20, towards the expenses of the cultivation of each kind of Potato sent by him to compete for the prizes offered.

Inspection of the growing crops by a representative of the Society will be made, once at least, during their growth.

In addition to the foregoing scheme of prizes and experiments, the Committee also recommend that each member of the Council be requested to furnish to the Secretary of the Society the names and addresses of any growers of Potatoes on a large scale within his district.

That some of the principal local agricultural societies be requested to furnish similar information.

That a series of questions be prepared to be sent as soon as possible to such of those growers as the Committee may select, in order to obtain the results of their experience, and that a report based on such replies be prepared for early publication in the Journal of the Society.

The Committee further recommended that Messrs. Jabez Turner, W. H. Wakefield, W. Carruthers, G. Hope, and J. Baldwin (Glasnevin), be invited to act as judges of Potatoes; and that a sum of £50 be placed in the hands of the Secretary to defray current expenses.

This report was adopted on the motion of Mr. Whitehead, seconded by Mr. Jabez Turner; and it was announced that the Directors of the Agricultural Hall Company would place a suitable warehouse for the reception of the competing kinds of Potatoes, rent free, at the disposal of the Society.—(*Land and Water*.)

### ENTOMOLOGICAL GLEANINGS.

Mr. WOFOR has recently communicated to the Brighton Natural History Society the result of some of his investigations regarding the uses of the antennæ of insects. He is as yet unable, however, to place before us such definite information as will leave the matter open to no question. In his paper he carefully considers the three leading hypotheses—namely, that these organs are either the seat of the sense of touch, of hearing, or of smelling. A variety of observations have been given by the advocates of these different views, each mainly in support of his own. As Mr. Wofor points out, there is no doubt at all that the antennæ are employed by many insects as organs of touch; but that still leaves it doubtful whether these are not intended primarily for another purpose in addition. Insects have been repeatedly seen to direct the antennæ towards the quarter whence a loud or sudden noise proceeded; and in the case of the larger Crustacea, it may be considered as proved that the organs of hearing are situated at the base of the long external antennæ. The microscopical researches of Newport and Hicks also point to the conclusion that among the insects the antennæ subserve the same purpose. As far back as 1847, however, Erichson's investigations had brought to light the fact that the walls of antennæ are full of small pores, and these pores contain fine hairs, in which he thinks the sense of smell is situate. Coupling this with the circumstance that the moths belonging to the Bombyx family, and which are attracted by the females from long distances, have large and deeply-pectinated antennæ, Mr. Wofor holds to the belief that the antennæ are organs of smell.

An illustration of those occasional singular assemblages of insects in large swarms is given by Mr. Cole in the "Entomologist." He observed last August, near Woodford, in Essex, that a patch of Fern and Broom, about four 4 square, was almost black with hosts of a little fly (*Sepsis cynipsea*), all slowly moving and vibrating their wings in a peculiar manner, while some object not apparent was engaging their attention. A few sweeps of a net brought together a mass of flies that weighed more than half a pound, and in bulk the flies exhaled a strong odour of Lemon Thyme.

A singular instance of the tenacity of life has recently been noted. An entomologist in capturing a specimen of the Grayling Butterfly (*Satyrus semele*), struck off its head. The insect lived in a pill-box for four days afterwards; and during this time, if occasionally liberated, it would fly a short distance.

A correspondent of the "Entomologist" suggests that the agency of hydraulic pressure is the means by which many insects escape from the pupa-case. He observed in several hundred individual moths belonging to two species that enter the pupa state in wood or the stem of a succulent plant, that when the insects burst open the case they emitted a fluid which filled the anal segments of the case, and no doubt assisted in their extrusion.

Writing on the subject of parasitic flies, Mr. Spicer observes that though the least likely place to discover the larvæ of an Anthomyia (or "flower-loving fly"), would be the human stomach, such larvæ do sometimes exist there. He explains their occurrence in man's interior by the supposition that they are introduced with vegetables which have been standing some time, and on which the mother fly has, "in the innocence of her heart," laid a batch of eggs. These larvæ cling, so it is said, to the inner surface of the intestine by means of minute spines with which the back and sides are armed. Troublesome, perhaps, as occasioning some pain and irritation, these undesired visitants can hardly be dangerous. That such

a thing does ever happen is one argument among others against the use of vegetables that are not perfectly fresh ; and perhaps our cooks ought to scrutinise leaves, &c., a little more carefully than at present.

## NOTES ON VILLA AND SUBURBAN GARDENING.

**PLANTING RANUNCULUS.**—Observe whether the roots are sound or not ; if they are damp or mildewed they are of little or no use. Any piece of ground which has been rough-dug in autumn, and left through the winter to receive the benefit of the frost, is just what the *Ranunculus* delights in. With regard to situation, some spot should be chosen, as remote as circumstances will allow, from hedges, old Box edgings, walks, or anything which might harbour slugs : a level space is to be preferred. Having fixed on a plan to plant, on the morning of a fine day level the bed rather roughly, but evenly, with a three-pronged fork, without putting a foot upon it, then let it remain till two or three o'clock, when it will be dry, and rake it perfectly level ; this done, draw a line up the middle, and, with a small trowel, draw a straight furrow, beginning at the centre and advancing to the edge with successive furrows. The amateur should regulate the size of the bed by the number of roots, and dispose of them equally all over it. Place the roots so that the crowns shall be  $\frac{1}{2}$  inch beneath the surface when the bed is completed, and having thus filled the furrow with tubers 4 inches apart, drop a little sand on each, sufficient to cover it, and draw the mould over the whole. The manipulations which have been described are rather laborious from the long continuance of the stooping posture, and they will probably discourage those who are not thoroughly imbued with a love of flowers ; but the resolute amateur will remember that no good results are ever secured without toil, and he will be cheered in his labours by the prospect of a splendid bloom.

**SEED-SOWING.**—As the busy season of seed-sowing is at hand, proceed with the general work, both in the flower and the kitchen garden, as fast as possible. Borders containing herbaceous plants that were not dug over in the autumn should, now that the bulbous plants are above ground, be attended to immediately. Instead of being dug they should be neatly forked over, previously dressing the ground, if poor, with rich compost or manure, and taking care to disturb the bulbs as little as possible. Coarse-growing plants, as *Asters*, *Achilleas*, *Phloxes*, &c., must be reduced in size. In doing this retain a portion of the outside, only removing the outer part and the centre ; or, if necessary, take up the plant altogether, and, after adding some fresh compost to the soil, replant the best part of the old stool. In this way neat compact plants may be obtained, and, what is an advantage in small gardens, some of the coarse-growing ones will be checked in their growth.

**CUTTINGS.**—Many of the more hardy of the autumn-struck plants for grouping, such as *Pelargoniums*, *Calceolarias*, common *Verbenas*, &c., may now be potted-off into small pots, and placed under the shade of the greenhouse plants until well rooted, so as to be ready to plant out in sand in temporary pits towards the end of March, and set the pots at liberty for other things. Very small pots must be used, the object being to get the compact ball of roots, which, when plunged in sand, will produce a dense mass of fibres, ready to push into the soil directly after the plants are placed in their permanent quarters.

For this reason I would advocate the autumn as the best season for striking cuttings, because every day in spring brings its work, while autumn is comparatively an idle time in the garden. Therefore, as three dozen plants can, on an average, be kept under every superficial foot of glass, let us get over these kinds in autumn, have them potted early in spring and plunged in temporary pits, so as to set the other pits and frames at liberty for more useful purposes. Any new or scarce plants of which your stock may be limited had better be placed in heat to produce cuttings for propagation. Among the plants not so extensively grown as their merits entitle them to be I may mention *Nierembergia intermedia*, *gracilis*, *Lantana Sellowii*, the old *Ruellia formosa*, *Bouvardia triphylla* and *splendens*. Both the latter plants are readily increased by pieces of the roots cut into portions about 1 inch long, placed over some light sandy soil, covered about half an inch deep, and plunged in a gentle bottom heat. The young plants must be potted-off when about 1 inch high. The old plants should be parted and potted in March, and placed in heat until they have produced shoots 2 inches long, after which they must be hardened-off previously to being planted-out. *B. splendens* strikes freely from cuttings, and the other species is best increased by roots.

A few seeds of *Brachycome iberidifolia*, *Schizanthus Hookeri*, *Priestii*, and *humilis* ; *Mesembryanthemum tricolor*, *Rhodanthe Manglesii*, *Clintonia pulchella*, *Phlox Drummondii*, and *Portulaca Thellusoni* may be sown in gentle heat to bloom in pots. Some of the autumn-sown annuals will require repotting.

In the kitchen garden plant a few early Potatoes at the foot of a south wall or on a warm border ; but if they can be placed on a slight hotbed, so as to start them into growth a little, they will

be as well planted three weeks hence. Make a small sowing of Lettuce, and also get in another crop of early Peas and the first crop of Windsor Beans.

Lay in a stock of different kinds of soil under cover while it is dry, ready for potting next month. In planting flowering shrubs be very particular to plant them at such distances that each plant may have plenty of room to grow and strike out its roots and branches freely. If shrubs are crowded together they become stunted in growth and lanky in form.

If you are forming a clump, or even a plantation, let each shrub be planted 6 feet apart from its neighbour ; but if you wish to plant *Roses*, *Syringas*, *Honeysuckles*, and *Lilacs* in your flower borders, they should be from 12 to 15 feet distant from each other, so as not to interfere with the flowers growing below them. October is the autumn month for transplanting shrubs, and February and March are the spring months. March is the last month for transplanting evergreens. When you wish to transplant or plant a shrub, dig a circular hole sufficiently large to receive the roots of the plant, which must be laid neatly down while some person holds the shrub in its proper position straight and upright, cut away any dead or damaged roots, then break the earth well with your spade and throw it into the hole, shaking the plant gently just to let the earth fall closely among the roots. When it is well filled-up tread the earth gently round the shrub to fix it, but do not stamp it. Water each shrub after planting, give a good soaking, and let the plant have a stake to support it.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

KEEN frost accompanied by cutting east winds brought everything to a standstill except *trenching*. The rough manure placed over the surface of the ground prevented the frost from penetrating deeply. In a previous article allusion was made to the undesirability of trenching the ground when the surface was frozen deeply. Another undesirable practice is to trench in a hard surface where the ground has been trodden or wheeled upon. This is sometimes done, the top spit being thrown to the bottom in lumps if the soil is at all heavy. In such a case it is best to fork the surface over, and if possible allow it to lie for a month or more until pulverised by the action of the atmosphere ; and if practicable, it is best to trench when the surface is dry.

**Nailing.**—Where this is not finished it ought to be completed as soon as possible. The Peach wall is generally left to the last ; and as the trees of this are more infested by insect pests than any others, it is best to unnaill the trees altogether and renail with new shreds. The old shreds can sometimes be used a second time if they have been dipped in boiling water. In most modern gardens, neat wire trellises are substituted for the old system of nailing. The only danger arising from this method is, that the wood is liable to canker if it is tied too firmly to the wires. Galvanised wire is the worst, ordinary wire painted is the best to use. The wire should be strained tightly, and fixed pretty close to the wall. All pruning should be finished as soon as possible.

We made a sowing of Celery in the open air ; the first sowing was made in a hotbed for the earliest crop. In our light gravelly soil the first sowing, which is generally made under a glass light, runs to seed to a large extent during the summer months. We have also been planting out Onions that were sown in autumn. In many gardens the spring-sown Onions are annually attacked by the grub, and the crop much damaged, or even totally destroyed. When this is the case, the best mode is to sow in autumn, and plant-out in rows or beds in February. In this way there is no danger of the crop being destroyed or even much injured by the worm.

**Parsnips and Carrots.**—We sowed the former. This vegetable is grown and appreciated in the neighbourhood of London, but in Scotland it is little known amongst the poorer class. The cottagers have their beds of Onions, Carrots, Leeks, and Cabbages, but wholesome salads and a nutritious vegetable like the Parsnip should find a place in all gardens. The best Parsnips are obtained from ground that has been trenched in the autumn, and the manure placed a foot below the surface. It may also be as well to state that where Carrots have been annually destroyed by the worm when the ground was dug in the usual manner, a sound crop has been obtained by following the above practice. Those who cannot obtain Carrots free from the worm would do well to try this system. Proceed in this way : At one end of the quarter to be trenched take out an opening 1 foot 6 inches deep and 2 feet 6 inches wide, this is to be wheeled to the extreme end to fill up the last trench ; mark-off a space close to the opening 2 feet wide ; take the top spit of this and throw into the opening ; the loose earth must also be shovelled in, this will take 6 inches from the surface. A good dressing of manure must now be put in, and the bottom soil thrown out on the top.

Where Radishes are through the ground a light covering of

straw should be thrown over them when there are any signs of frost. Earth-up early Cabbages.

#### FRUIT AND FORCING HOUSES.

**Vineries.**—In our early houses we have been tying and training the growing shoots. The growth of the Vine is very rapid, and a few days of inattention now might lead to results that could not be remedied during the whole of the season. All leading growths are trained where they will not be too much shaded by the leaves of the laterals; these are stopped two eyes beyond the bunch as soon as possible. The young growths must also be carefully handled; if they are bent down too much at one time, they will either snap off during the operation or the following night. With care the growths may be trained into any position, and all of them should be brought underneath the wires. Some sorts of Vines are more difficult to train than others; those with gross wood are easily damaged. Of this description Golden Champion may be taken as one. A person who did not know its character, and who would train it as he did a Black Hamburgh, would find a number of the best varieties broken-off in the morning. A good supply of atmospheric moisture must be kept up, but saturation must be avoided. Damp the paths, walls, and borders twice a-day, and oftener if the sun is powerful; shut-up as early as possible in the afternoon, and keep the night temperature about 65°. If the weather is mild the Muscat house may rise to 70°, but do not try to get up to this if the days are cloudy and the nights cold. When there is little sun at this season, forcing houses require as much firing by day as at night. It is a common mistake with young gardeners to act contrary to this. They start their fires in the afternoon to get-up the heat; and in the morning, if the heat in the house is all right, it is a common practice to bank-up the fires for the day. This answers very well if there is a chance of sunshine. In dull weather the fires must be maintained.

**Peach House.**—In the earliest house, if the fruit is set, it will not be necessary to be so very cautious in regard to atmospheric moisture. The trees should be thoroughly syringed every day: at present this is best done in the morning. A portion of the fruit should be thinned out, but too much should not be taken off the trees at one time. It is as well to make three thinnings, and the same in regard to disbudding. If too large a portion of the growing wood or leaves is removed from a Peach tree or Vine that is being forced, it tends considerably to paralyse the functions of the tree. Many Peach-growers leave a large portion of the fruit to be thinned-out during stoning, but if the trees are in good health and not overburdened with fruit there is no danger of its dropping off at that time.

**Orchard Houses** that are not furnished with a heating apparatus should be freely aired, so that the trees may be kept in a backward condition. The later they are in flowering the less danger will there be of the blossoms being damaged by frosts. If the trees are in pots they will not require water once a-week, but it is well to look over them as often as this, and water those that require it. If the trees were infested with aphids last season, even though none can be seen now, it will be as well to give the house a good fumigation with tobacco smoke. This pest begins to increase when the trees are in flower, and it is better to kill it before the trees are so far advanced.

#### STOVE AND GREENHOUSE.

It has been necessary to make a re-arrangement in the stove: some Orchids which are wintered in a drier and cooler house have now been removed hither. Orchids, Ferns, and some other plants have been repotted. Lycopods are also found useful in the stove for placing near the edge of the staging to hide other plants; to be kept in the best health they require frequent potting. One of the commonest but most useful is *Selaginella denticulata*, and the variety having the growths tipped with white is very pretty. *S. apoda* is a neat species, and one of the prettiest trailing species is *S. cæsia*. Many of the species are very elegant grown in large pots, and they make very handsome specimens indeed. Of these the best are *Selaginella africana*, *formosa*, *Lobbi*, *Lyalli*, *Walli*, *Walcovici*, and *Wildenovi*. The last-named is a very neat-growing pretty species, which does well in a greenhouse.

Any hardwooded plants requiring training should be attended to at once. The same remark applies to greenhouse plants of a similar character. The temperature of the greenhouse and conservatory should be warmer, presuming that the houses contain forced flowers. During the recent cutting east winds much attention has been required to keep up a proper temperature to suit the different occupants. Hardwooded plants are apt to suffer if air is not admitted freely; and stage *Pelargoniums* become a prey to green fly in a close atmosphere. It has been necessary to fumigate for this. Where a continuous display of flowers is required, it is necessary to remove fresh batches of all the different sorts of spring-flowering plants and bulbs to the forcing house once in two or three weeks. Such subjects as *Hyacinths* and *Roses* should be placed near the glass, though all plants should have as much light as possible at this season. Stage *Pelargoniums* have been potted into their flowering pots.

Turfy loam, leaf mould, rotted manure, and some bone dust were the potting material used; the plants not being intended for specimens, but to produce good trusses of flowers, the shoots have not been stopped nor tied down.

#### FLOWER GARDEN.

We had pruned a large portion of the *Roses* before the frost, the remainder have been finished since. The ground has been well manured, and is to be forked over as soon as convenient. *Phloxes* may now be planted. Plants from cuttings struck early last season, and which flowered in pots in the autumn, are the best, the spikes being much stronger than when division of the roots is resorted to in order to increase the stock. The *Phlox* is a gross feeder, and luxuriates in deeply trenched soil that has been highly manured. We have a good stock of all bedding plants except *Alternanthera amena*; this is the prettiest of all, and at the same time the most difficult to grow. If there is a scarcity of it the plants should be in heat, and cuttings should be taken off as fast as they can be procured.—J. DOUGLAS.

#### TRADE CATALOGUE RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood, London, N.W.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*

#### TO CORRESPONDENTS.

\* \*. We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

**PERSONALITIES.**—It is only from courtesy to our correspondent "AN OLD SUBSCRIBER," who has sent us an extract from our Irish gardening contemporary containing one of the strictures alluded to by "A WELL-WISHER" a week or two ago, that we again make any reference to the subject. It is really too contemptible to take any notice of. The only allowance we can make for "the strictures" is, that they must have been written by some half-educated person who cannot appreciate the writings of gentlemen, and we can but pity him. He, like many of that class, like to have everything reduced to their own standard, which is a very low one; but that would not suit the readers of this Journal. We cannot allude to this subject any more.

**BOOKS (D. R. C.).**—"The Orchid Manual." You can have it free by post from our office if you enclose thirty-two postage stamps with your address.

**CHRISTMAS ROSE (W. L.).**—You had better advertise if you require a quantity.

**STOVE (A Constant Reader).**—We do not know it, and not one is admissible among plants that has not a smoke-flue.

**PRUNING PEACH TREES (C. S.).**—Shoots that have only a small portion of young wood at the point of a long shoot or branch ought to be cut out, and their place taken by younger and more vigorous shoots. The main branches of the tree should be about a foot apart, and from these a young bearing shoot should be trained-in at every foot, and if more than a foot long they should be shortened to that length, but if strong they may be left at their full length. We always, however, shorten ours to as near a foot as we find a wood bud. Full instructions for pruning Peach trees are given in the "Modern Peach Pruner," which you may have by post from our office for 3s. 8d.

**EUCHARIS AMAZONICA IN GLASS CASE (R. R.).**—It would grow well in a heated case, but we fear would not flower unless you were to remove it for a few weeks in summer, or even place it in a window so as to induce rest; after about six weeks it might be returned to the case, and would probably flower. The time to remove it would be when it had made a good growth, and the leaves were full-sized, the plant appearing stationary as regards growth. Plants may be obtained of any of the principal nurserymen.

**GERANIUMS GROWING (Biceps).**—The Geraniums are starting into growth from the warmth, and would be better removed to a cooler place, the cooler the better, if safe from frost. Place them where they will have light. Cut away all the long straggling horn-like shoots to within an inch of their base. There is no doubt the plants will be much injured by the warmth and premature growth, but by giving them a lighter and cooler position it is likely they will recover.

**SALT FOR GARDEN (Idem).**—You may beneficially apply the salt to your kitchen garden ground in March, scattering it evenly over the surface, but not upon growing plants, though it may be distributed between the rows and about the plants, at the rate of twenty bushels per acre.

**PEAR TREE GIUPE-EATEN (Idem).**—From your description we think the "worm" in the trunk of your Pear tree is the larva of the goat moth. The caterpillar should be destroyed by thrusting a wire up the hole, even if it be necessary to enlarge the hole to get at it. It has been found that chloroform closed in the hole destroys the caterpillar, and no doubt linseed oil injected would do the same. Tobacco smoke blown in has also been found useful.

**HYACINTHS IN GLASSES ROOTLESS (Idem).**—Probably the want of roots is a result of the glasses being in too strong light. Cover them with paper just level with the roots downwards, and we think you will find the roots will

descend. Keep the water sweet, and continue the bits of charcoal, taking care that the water is of the same temperature as the room.

**VERONICA SALICIFOLIA CULTURE (Birdie).**—This is the name of the plant of which you sent us a specimen. It is a half-hardy evergreen shrub, and requires to be grown in a greenhouse, though it will succeed very well outdoors in summer. It is increased by cuttings of the growing shoots taken off with two joints, and the growing points inserted in sandy soil up to the second joint, the leaves being removed below the lowest joint. Place the cuttings in a gentle bottom heat. To keep it dwarf and bushy, cut it down in spring, and keep it stopped, so as to induce side shoots. The best plants are these from cuttings stopped until a good-habited bushy plant is formed; then allow it to grow for flowering. It will not bloom well if kept very closely stopped.

**CONTINUOUS SUCCESSION OF FLOWERS (Idem).**—Chrysanthemums from October to January inclusive, Fuchsias from May to October, and Primulas from October to May. These are the times when they are usually in flower; and though they may be bloomed at other seasons, it is not desirable, as the flowering is not satisfactory.

**VINE FOR CUCUMBER HOUSE—ORCHIDS (Idem).**—We do not consider a Cucumber house suitable for Vines, but the kind that would do best in winter along with the Cucumber is the Black Hamburgh. Orchids succeed well in a Cucumber house, as *Azidee falcata*, *Odontium maximum*, *Lobelia*, *Angraecum sesquipedale*, *Cattleya superba*, *Cypripedium barbatum superbum*, *C. lirsutissimum*, *C. villumum*, *Dendrobium chrysotoxum*, *D. densiflorum album*, *D. Farmeri*, *D. macrophyllum* Dayanum, *D. Piccardi*, *Phalenopsis amabilis*, *P. grandiflora*, *P. grandiflora superba*, *P. Schilleriana*, *Saccolabium guttatum giganteum*, *S. reteneum*, *S. Blumei*, *Dayanum*, *Vanda gigantea*, *V. insignis*, *V. snavis*, and *V. violacea*.

**CAMELLIA LEAVES UNHEALTHY (Gardener).**—The leaves are probably in this condition from having been exposed to powerful sun when the plants were making fresh growth. Slight shade from bright sun is necessary during summer. With this the foliage will, we think, be all right another season; but we should advise you to see to the roots, making the drainage good, and potting if required; or remove the surface soil down to the roots, and topdress with fresh soil. In doing so be careful not to injure the roots.

**POTATO PLANTING (F. E. T.).**—Plant early in next month during dry weather. We prefer medium-sized tubers for planting, cutting off the crown or cluster of eyes at the end only. If the tubers are large we prefer cutting them in halves, and leaving two or three eyes in each half. Using small sets is a great mistake. In storing seed Potatoes, it is of no consequence whether the eyes are upwards or downwards. Store in a cold place to prevent the eyes emitting long shoots before planting time.

**HAND-DRILL (J. H. L.).**—Drilling, as you say, is a difficult operation for an unskilled amateur. A very simple and at the same time a very expedient and effective mode of planting small seeds, is to put them in a wine bottle, with a quill inserted in the cork, as shown in the cut. If the seeds are extremely small, and it is necessary to sow them thinly, mix the seed with dry sand before it is put in the bottle.



**TREES OVERSHADOWING (R. H. D.).**—The usual course is to give notice to the owner of the trees of the injury they occasion, and ask him to remove the branches overhanging your garden. If he neglects doing so, then usually you might cut them off; but there are many facts of which we know nothing, and which may control your right, so you had better consult your solicitor.

**EPACRIS AND AZALEAS DYING (R. S.).**—Probably the plants have gone off from having been in small pots and pot-bound, and then shifted into larger pots, or the soil may have been unsuitable. "Black soil" does not sound well. It may have been bog soil, which does not suit these plants. Sandy fibrous brown peat is necessary, and in shifting from small pots the shift should not be large; the sides of the ball should be loosened with a pointed piece of wood, and the neck or collar of the plants kept high in the centre of the pots, or level with the rim, and the soil should fall gradually, so as to be about half an inch below the rim of the pot.

**FORCING ONE-YEAR-OLD SEA-KALE (Rus.).**—The seed should be sown in March, or, if the ground is then wet and cold, early in April, in drills a foot apart and an inch deep, placing the seeds about an inch from each other in the drills, and covering with fine soil. The plants should be thinned so that they may stand 6 inches apart, and be kept clear of weeds. They will by autumn be nice plants, and should be taken up when the leaves have fallen, and be placed in pots or boxes to be removed to a dark place where there is gentle heat. If you wish to force on the ground it will be necessary to sow in holes about an inch deep, and in a circle about 4 inches across, putting in the seeds about an inch apart. Four of the best plants may be left to form a stool. The stools should be 18 inches apart and 2 feet from each other in the row, allowing twice the latter distance between every two rows, so as to force two rows at a time.

**ROSE PRUNING (Idem).**—Your Roses will have their young growths cut by the recent frosts. Cut them back now to within three or four eyes of their base, or to eyes that have not started into growth. Any strong shoots may be left a little longer, and weak shoots should be cut-in to one or two eyes.

**ANNUALS FOR CHOQUET GROUND (Petite).**—You could not improve on the pink and white varieties of *Saponaria calabrica*, the seed being sown in March or early in April amongst the bulbs, which will not be injured by the *Saponaria*, but the latter may suffer if the bulbs cover the ground densely. The leaves and stems of the bulbs should be removed as they die off. For the boxes annuials will answer, and they are less expensive than plants. Sweet Alyssum, white; *Abronia umbellata*, rosy lilac; *Gypsophila muralis*, pink; *Sanvitalia procumbens flore-pleno*, yellow; *Lobelia speciosa*, blue; and *Mignonette*. For covering the sides, *Maurandia Barclayana*, purple, and its white variety, are good, and may be raised from seed; but all the annuials named will hang over, and so cover the sides of the boxes. A few hardy plants for the garden are *Achillea umbellata*, *Alyssum saxatile*, *Anubria Campbellii*, *Campanula floribunda*, *Delphinium Barlowii*, *Draba aizoon*, *Helleborus niger*, *Hemerocallis Kwanso flore-pleno*, *Hepatica angulosa*, *Iberis semperflorens*, *Lythrum grandiflorum*, *Myosotis dissitiflora*, *Oenothera macrocarpa*, *Papaver nudicaule*, *Phlox verna*, *Potentilla Menziesii*, *Saxifraga longifolia*, *Spiraea japonica*, *S. palmata*, *Statice latifolia*, and *Veronica taurica*.

**BENDING PLANTS FOR TRICOLOR FLAG (Alpha).**—The best representation we have seen was *Scarlet Geranium*, *Payne's Perpetual*; white, *Centaurea ragusina compacta*; and blue, *Lobelia speciosa*.

**FERNS FOR GREENHOUSE—DOUBLE RED AND WHITE GERANIUMS (L. A.).**—A few Ferns are *Acrophorus hispidus*, *Anemidictyon phyllitidis*, *Adiantum Capillo-Veneris*, *A. aethiopicum*, *A. cuneatum*, *A. setulosum*, *Asplenium bulbiferum*, *A. dimorphum*, *Blechnum occidentale*, *Cheilanthes elegans*, *Davallia canariensis*, *D. dissecta*, *Lactaria acuminata*, *L. glabella*, *Lomaria gibba*, *L. L'Herminieri*, *Nephrodium molle* and var. *eorymbiferum*, *Nephrolepis exaltata*, *Onychium japonicum*, *Platyceerium alcorni*, *P. retundifolium*, *Pteris cretica albo-lineata*, *P. serrulata* and var. *cristata*, *P. tremula*, and *P. umbrosa*. Of Lycopods: *Selaginella denticulata*, *formosa*, and *Wildei*. Full particulars of treatment are given in "The Greenhouse," which you may have free by post from our office for 10d. Double red Geraniums are *Incedie de Fontenay*, *Victor Lemoine*, *Geliath*, *Wilhelm Pfitzer*, *Gambetta*, and *Princess Teck*. White doubles are *Album plenum*, *Alice Crousse* (this has a salmon centre), and *Aline Sisley*. The double-flowered are more durable for cut flowers than single.

**BLUE TITMUSE EATING PEAS (J. W. L.).**—There is no means of preventing these birds from taking Peas but to destroy them, which is a great pity, as for the greater part of the year they live on insects, and it is only a short time they do harm, generally when they have young. Peas for a succession are *Sangster's No. 1* for present sowing, and at the same time *Alpha*, then at fortnightly or three-weeks intervals *Maclean's Dwarf Prolific*, *Wonderful*, *Veitch's Perfection*, and *Premier* up to June, and in that month two sowings of *Ne Plus Ultra* and *Premier*. *Snow's Winter Broccoli*, to come in during November, should have the seed sown early in March.

**ERICA CAVENTISHII PRUNING (Idem).**—It requires no pruning beyond shortening irregular growth, so as to form an evenly-balanced specimen. This should be immediately after flowering, and the old flowers ought to be removed directly the flowering is over.

**DESTROYING ANTS (Alpha).**—The best means of destroying them is to place small pieces of beetle poison, about the size of a pea, on a piece of slate in their runs, taking care that no domestic animal partakes of it. Another good plan is to get two pieces of sponge, dry and clean, and on two sides smear them with honey; place those two sides together, and put the pieces in the haunts of the ants, which will pass into the sponge, and may be immersed in boiling water. It answers nearly as well to dredge the sponge with powdered loaf sugar. The sponges having been washed clean and dried, may be used again and again. Ants are also fond of olive oil; this, placed about 1½ inch deep, in jam pots put in their runs, will take them in great numbers, and may be left until rancid; then the pots should be thoroughly cleaned and renewed with oil. The best salad oil should be used.

**CORN SALAD (D. L.).**—The Broad-leaved Italian is the best variety, and to have it in winter a sowing should be made about the second week in August, and again at the beginning of September. Sow in light rich soil and in a sheltered position, watering if the weather be dry. It is best sown in drills about 6 inches apart. Stir the ground frequently between the rows, and if the plants are too close together thin them out to an inch apart, further thinning as required for use to 4 inches, and these will give a succession of leaves. These should be taken off for use for Spinach. In severe weather a protection of mats or other covering should be put on.

**STOVE PLANTS FOR JULY AND AUGUST (A Three-years Subscriber).**—We presume the *Allamanda* has been kept dry. We should now repot it, removing most of the old soil, and return it to the same pot or one of a size that will hold the roots properly, placing the plant in bottom heat if you have it. The shoots should be tied down, so as to induce them to break regularly, and as the pot becomes full of roots shift the plant into one at least 2 inches larger. The shoots should be tied to a trellis, about which you must exercise your own judgment. Water moderately at first, but increase the amount as the plant grows more freely, maintaining a moist atmosphere. The *Bougainvillea* should have similar treatment to the *Allamanda*. The *Ixora* you will need to keep back—rather dry and cool until May, and then you may encourage growth by a brisk heat and moist atmosphere. *Stephanotis floribunda* you will also need to keep cool and dry until the beginning of June, then place in heat and moisture. The *Ixora*, if not specimen, may be placed in bottom heat now and growth encouraged, then repot, and after they have made a good growth gradually reduce the moisture; about the middle of June return to moisture and a brisk heat, and you may have them in flower at the time wished for.

**GARDENER EMIGRATING (A Journeyman Gardener).**—We never recommend any place for emigration, so much depends on the character, &c., of the emigrant. We knew that gardeners who have gone to Victoria are very thriving.

**NAMES OF FRUITS (T. F.).**—The Apple, *Shepherd's Fame*, is described in Hogg's "British Pomology" as a large, obtuse, ovate fruit of a pale straw colour, with broken patches of crimson on the shaded side, streaked with yellow and crimson on the side next the sun. The flesh is yellowish, soft, and tender, sweet and briskly flavoured. In use from October to March.

**NAMES OF PLANTS (C. S. W.).**—1, *An Echeveria*; 2, *Indeterminable*; 3, *Alyssum maritimum variegatum*; 4, *Peizia coccinea*. Very bad specimens. (*M. S. H.*)—*Nicotiana undulata*. (*J. Huisk.*)—*Sparmannia africana*. (*Constant Reader*).—An *Echeveria*, but we cannot determine the species. (*T. Turner*).—Your Orchid was too shrivelled for determination; it is probably a *Pleurothallis* or *Stelis*. (—*Name mislaid*).—*Lochroma grandiflora* (?) Bot. Mag., t. 5301. (*Fire*).—*Aspidium triangulum*. (*F. W. H.*)—1, *Gymnogramma ochracea*; 2, *G. L'Herminieri*; 3, *Indeterminable*. (*W. A. E.*)—We cannot name plants from leaves only.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### OBJECTING TO JUDGES.

I WRITE to bring before the fancy matter which concerns their interests most vitally, and especially now, when the cry arises on all sides for more judges; the proceedings I wish to expose being directly calculated to render the supply of those we already have deficient, and that in a manner, I think, most despicable. It appears to be the practice of a few individuals "who I have been led to understand act in a certain degree in

concert," to send their entries subject to a condition that if a judge officiates whom they will pick out, their entries are to be returned. Now, at first sight it may appear nothing unreasonable that anyone should exercise an undoubted right either to keep his birds at home or only show them under certain conditions; but let us see how this system of protest, as at present carried on, may—nay, even does, work. By way of illustration we will suppose half-a-dozen fanciers make up their minds to exclude a certain judge, A, B, or C, the entries (probably increased to some extent) are sent in by each subject to the condition named, that, say, Mr. A does not judge. We know the anxiety of all active promoters of shows to secure a good entry, and need not wonder the result is in nearly every case, that as they have other choice the judge named is passed over; a reflection is cast upon his character and an injury done, he knowing neither his transgressors nor being able to meet any charge. It will thus appear that a combination of but a few fanciers could influence, or rather almost destroy, the prospects of any judge as a judge. This I know has been done, and done without justice or valid reason, in more cases than one, and I think this sufficient excuse for my writing, because if rings or cliques of this description increase true fanciers will fear—*RESPICERE AD FINEM*.

### BRIDGNORTH POULTRY SHOW.

For the sake of other exhibitors of poultry I think it only right to make known, through the pages of THE JOURNAL OF HORTICULTURE, the treatment my poultry have received from the Committee of the Bridgnorth Show. The Show took place on the 21st and 22nd of January. On the 20th I sent sixteen pens of different kinds over in my own cart, the same conveyance being sent to bring them back on the 23rd. Only eleven pens were returned, and the man was told that "the Turkeys were sold." Hearing nothing more I concluded the other pens were also sold; and it was only on Wednesday last, February 11th, three weeks afterwards, that I heard from the Secretary "that some of the fowls had been sent by rail by mistake; they are still here being well taken care of." I was requested by him to send for them; this I did on Thursday, the 12th of February, and the fowls (valuable Dorkings of different kinds, three hens and a cockerel) were seen by the man who went for them running in a yard with Brahmas, Cochins, &c. The explanation given me by the Secretary of this delay is as follows:—"We have been so much engaged the last fortnight in this hurried election, we have not been able to attend to anything." Surely the writing on a post card the request that the cart might be sent from this place to Bridgnorth (eight miles distant) would not have taken very much time, even in the midst of a hurried election, and I should not have been deprived of my fowls for three weeks.—*AUGUSTA DARTMOUTH, Patshull, Albrighton, Wolverhampton.*

### PRODUCTION OF EGGS.

I WRITE to let you know the success that has attended my management learned from your Journal. I there first saw that ground oats are a nourishing food for fowls in cold weather and to bring them on to lay. During the month of November I fed them on the oats (scalded), with maize and barley, twice a-day. I have fifty-four stock poultry, including cocks; they are Houdans and Brahmas. The Brahma pullets commenced laying early in December, in which month I had 236 eggs; others coming on increased the number in January to 363; to-day (the 14th of February) I have 239, the produce of fourteen days. So you see there is still a great increase. I have had several hens that wanted to sit, which I have shut-up in the dark for two days; they then come on to lay again in less than a fortnight. They have an unlimited grass run every other day, the Houdans out one day the Brahmas another, as I keep them apart.—*G. L.*

### SUPPLY OF POULTRY-SHOW LABELS.

MAY I call your attention and that of poultry-show secretaries to a matter of no slight importance to exhibitors—that is, the posting of labels? I have the fortune, or misfortune, to live in a rugged mountainous land called "Wild Wales," where postal deliveries and trains are few and far between; and in addition to this, I am six miles from either post office or station. Now, six times in seven weeks have labels not been sent in time, and in three cases not at all. When they are sent they arrive often not more than from seven to eight hours before the birds should be delivered at the show; and when amongst the aggressors one finds the names of Newport, Wolverhampton, and Hanley, it is all time that this should be remedied.—*MANOC.*

SCHEDULE OF THE NORTHAMPTON SHOW.—I wish to call attention to the liberality of the Committee in providing so many cups and other prizes for so large a number of classes. In the Pouter classes more particularly there are no less than eighteen

prizes, two of which are silver cups [one to be awarded to the best cock, the other to the best hen]. This, I think, ought to secure strong competition and induce numerous entries of these majestic birds, especially as they are to be judged by Mr. F. Gresham.—*A POULTRY AND PIGEON FANCIER.*

### BARROW POULTRY SHOW.

This was held on the 13th and 14th instant. There were upwards of six hundred entries, among which the following awards were distributed:—

**GAME.**—Cock.—1, Miss M. J. Nelson, Cockshaw, Hexham. 2, T. Mason, Lancaster. 3, J. & A. McKay, Berhead.  
**GAME.**—Chickens.—Cup, T. Mason. 2 and *vice*, W. Boulton, Dalton. *he*, J. Brough, Carlisle; Miss Lister, Stokesley.  
**GAME.**—Chickens.—1, C. H. Wolf, Hale, Altrincham. 2 and 3, W. Boulton. *he*, D. Gibson, Barhead.  
**GAME BANTAM.**—Cock.—1 and 3, Mrs. G. Hall, Kendal. 2, T. Barker, Hill End, Burnley. *he*, Miss M. J. Nelson; Mrs. W. Laycock, Sedgwick; M. Leno, Markyate Street.  
**SELLING CLASS.**—1, G. C. Wilson, Dallam Tower. 2, W. Whitworth, jun., Longsight. 3, E. Smith, Passmans, Rochdale. 4, J. Leeming, Broughton. *he*, W. H. Crabtree, Levenshulme; T. W. Finch, Fulwood; T. Davidson, Egremont; J. & G. Weeks, Bootle; L. Casson, Walston.  
**SPANGLED.**—Black.—1, J. Leeming. 2 and 3, C. R. Ray. *he*, H. Wilkinson, Earby.  
**DORKINGS.**—1, J. Walker, Rochdale. 2, D. Gibson. 3, J. White, Warlaby. *he*, W. Jackson, Bolton le Sands.  
**GAME.**—Black-breasted and other Reds.—Cap, T. Mason. 2, G. C. Wilson. 3, H. Sharp, Shelf, Halifax. *he*, J. H. Wilson, St. Bees. *c*, J. H. Mackereth, Holborn Hill, Cumberland. *Puckings and other Greys and Blues*—1, H. Martin, Ulverston. 2, J. W. Thornton, Bradford. 3, J. W. Brockbank, Kirkstall. *he*, C. H. Bonree, Ilkerton.  
**COCHIN-CHINA.**—Cinnamon and Buff.—Cap, W. H. Crabtree. 2, J. O. Rigg, Ulverston. 3, G. Cartmel, Kendal. *he*, C. J. Myers, Broughton-in-Furness; T. Stretch, Ormskirk. *Brown and Partridge*—1 and 3, T. Stretch. 2, T. Aspin, Church. *he*, J. J. Waller, Kendal; W. H. Crabtree. *White*—1, J. T. Weeks. 2 and 3, W. Whitworth.  
**BRAMA POOTRA.**—1 and 2, W. H. Crabtree. 3, A. Bamford, Middleton.  
**HAMBOURG.**—Golden-pencilled.—1, R. Dickson, Solihull. 2, G. & J. Dnekworth. 3, J. Anderton, Gilstead. *Silver-pencilled*—1, T. Boulton, Handforth. 2, J. Rhodes, Hyndburn, Acerrington. 3, W. H. Goddard, Barrow.  
**HAMBOURG.**—Golden-spangled.—1, N. Marlow, Denton. 2 and 3, G. & J. Duckworth. *he*, J. Hall, Stacksteads, Manchester; A. Harbun, Bishop Aockland. *Silver-spangled*—1, Ashton & Booth, Mottram. 2, H. Stanworth, Burnley. 3, T. Bellman, Ulverston.  
**ANY OTHER VARIETY.**—1, J. Walker. 2, H. Sharp. 3, A. Silvester, Sheffield. *he*, C. J. Myers; R. Hawkins, Seaham; W. Whitworth; W. H. Goddard; T. Maples, Blackburn.  
**BANTAMS.**—Game.—1, J. Heaton, Grantham. 2, Mrs. G. Hall. 3, W. Gray. *he*, Mrs. G. Hall; Miss M. J. Nelson. *Game, any other variety*—1, J. Heaton. 2, T. Barker, Burnley. 3, Miss M. J. Nelson. *vice*, Mrs. G. Hall; W. Murray, Hexham. *he*, Miss M. J. Nelson; W. Gray, Tow Law, Darlington. *Any other variety except Game*—1, W. Moore. 2, M. Leno. 3, R. H. Ashton. *he*, W. H. Robinson, M. Leno.  
**DOCKS.**—1, J. Walker. 2, W. C. Hunter, Old Barrow. 3, J. W. Brockbank. *Rouen*—1, J. Walker. 2, R. Gladstone, Broad Green, Liverpool. 3, Miss M. J. Nelson. *he*, R. Gladstone. *Any other variety*—1, A. T. Umpleby, Boroughbridge. 2, M. Leno. 3, J. Walker. *he*, R. Gladstone; M. Leno.

### PIGEONS.

**CARRIERS.**—1, J. Thompson, Bingley. 2, D. Garside, Manchester. *he*, W. Jackson.  
**POUTERS.**—1 and *he*, J. & W. Towerson, Egremont. 2, H. Yardley, Birmingham.  
**TOBLES.**—1, W. Braydon, Dun. 2, J. Fielding, jun., Rochdale. *he*, H. Yardley; J. Gardner, Preston (2).  
**JACOBIANS.**—1, J. Thompson. 2, W. Braydon. *he*, H. Yardley; J. & W. Tower son; J. Thompson.  
**ANTWERPS.**—1, C. F. Copeman, Roshull. 2, J. Gardner. *he*, C. E. Peddar, Preston; H. Yardley; J. Gardner.  
**RAMPS.**—1, H. Yardley. 2, T. W. Towerson.  
**ROCKS.**—1, A. Silvester. 2, J. Wilson, Rignadon, Kirkby Lonsdale. *he*, W. Braydon. *Wilson*; T. W. Towerson.  
**OWLS.**—1, W. Braydon. 2, J. Gardner. *he*, T. W. Towerson, Bowdon.  
**FANTAILS.**—1, T. W. Towerson. 2, J. Thompson. *he*, W. Braydon; J. F. Loversedge, Newark.  
**DRAGONS.**—1 and *he*, J. Gardner. 2, J. Thompson.  
**TRUMPETERS.**—1 and *he*, J. Gardner. 2, J. & W. Towerson.  
**ROCKS.**—1, J. Fisher, Barrow. 2, H. Yardley.  
**ANY OTHER VARIETY.**—1, A. Silvester. 2, J. Gardner. *he*, A. Silvester; C. H. Sharp; J. & W. Towerson (2).  
**SELLING CLASS.**—1, J. & W. Towerson. 2, Miss J. Thompson. *he*, W. Jackson; J. & W. Towerson (2); J. Fisher.  
**CANARIES.**—Mule.—1, T. Scully. 2, J. Williams. *Piebald*—Yellow or Buff.—1 and 2, J. Moffat, Ulverston.  
**JUDGES.**—Poultry and Pigeons: Mr. R. Teebay, Fulwood, Preston. Canaries: Mr. J. Boulton, Ulverston.

### HANLEY POULTRY SHOW.

This was held on the 10th, 11th, and 12th inst. The following awards were made:—

**DORKINGS.**—Dark.—1, L. Patten. 2, J. Walker. 3, Mrs. Arkwright. *Any other variety*—1, Duke of Sutherland. 2, J. Walker. 3, W. Badger.  
**SPANGLED.**—1 and Extra, J. R. Reddard. 2, R. Newitt. 3, J. Walker. *he*, Mrs. Allsopp; G. Hurst.  
**COCHINS.**—Cinnamon and Buff.—1 and 3, W. A. Taylor. 2, H. Beldon. *he*, W. A. Bunnell. *Brown and Partridge-feathered*—1, W. A. Taylor. 2, T. Stretch. 3, Withheld. *White*—1, R. S. S. Woodgate. 2, W. A. Bunnell. 3, W. Whitworth, jun. *Any other variety*—1, J. Walker. 2, H. Frankland. 3, A. Darby.  
**BRAMA POOTRA.**—Dark.—1, Extra. 2, W. H. Crabtree. 3, Mrs. Arkwright. *he*, W. A. Taylor. *Light*—1, W. H. Crabtree. 2, T. A. Dean. 3, J. R. Reddard.  
**POLISH.**—1, Extra. 2, H. Beldon. 3, A. W. Crichton.  
**CREVE-COEUR.**—1 and 2, R. B. Wood. 3, J. J. Malden.  
**HOUDAN.**—1, W. Whitworth, jun. 2, R. B. Wood. 3, J. French.  
**ANY OTHER VARIETY.**—1, T. Marples (Sultana). 2, Rev. A. G. Brooke. 3, H. Beldon. *he*, E. Vickess (Sultana); J. F. Walton (White Malay).  
**GAME.**—Black-breasted Red.—Cock.—1 and Extra, R. Ashley. 2, C. Chaloner. *he*, J. A. Fletcher. *he*, C. Chaloner; J. Forsyth. *Black Red*—H—a—1, J. P. Gardener. 2, S. Andrews. 3, W. J. Pope. *he*, E. H. Wood; C. Chaloner.  
**GAME.**—Brown Red.—Cock.—1 and Extra, R. Ashley. 2, Duke of Sutherland.

3, J. R. Fletcher. *hc*, G. Lunt. *Hen*.—1, Miss Osborne. 2, J. R. Fletcher. 3, J. F. Walton. *hc*, R. Ashley. *c*, E. H. Wood.  
*GRAYS*.—*Dusky*.—1, R. Ashley. 2, J. R. Fletcher. 3, J. F. Walton. *hc*, R. Ashley. *c*, E. H. Wood.  
*GRAYS AND BLUES*.—1 and Extra, D. W. J. Thomas. 2, E. Winwood. 3, R. Ashley. *hc*, C. Chaloner. H. Beldon. *Any other variety*.—1, R. Ashley. 2, J. Brassington. 3, Duke of Sutherland.  
*HAMBURGIA*.—*Black*.—1, Rev. W. Serjeantson. 2, J. Robinson. 3, H. Maskory. *c*, H. Beldon; Rev. W. Serjeantson.  
*HAMBURGIA*.—*Golden-spangled*.—1 and Extra, M. Cashmore. 2, T. Bolton. 3, G. J. Duckworth. *hc*, H. Beldon. *c*, T. Bolton. 3, Duke of Sutherland.  
*Golden-pencilled*.—1 and 2, H. Beldon. 3, Duke of Sutherland.  
*HAMBURGIA*.—*Silverspangled*.—1, H. Beldon. 2 and *hc*, J. Fielding. 3, J. Robinson. *Silver-pencilled*.—1 and 3, H. Beldon. 2, J. Rhodes.  
*BANTAMS*.—*Black-breasted Red*.—1 and Extra, R. Swift. 2, J. Eaton. 3, H. Beldon. *Gamy*.—any variety.—1, J. R. Fletcher. 2, C. Pole. 3, A. Ashley. *Black or White*.—*Clean-legged*.—not *Gamy*.—1 and Extra, R. A. Ashton. 2, J. Walker. 3, H. Beldon. *Any other variety*.—not *Gamy*.—1, J. Walker. 2, F. Holbrook. 3, Duke of Sutherland.  
*DUCKS*.—*White Aylesbury*.—1, 2, and 3, J. Walker. *Any other variety*.—1, H. B. Smith. 2, Mrs. Arkwright. 3, J. Walker. *hc*, E. A. Ridgway; H. B. Smith; Master R. Broughton. *c*, Rev. W. Serjeantson.  
*GESE*.—*White*.—1 and 2, J. Walker. *Grey*.—1 and 2, J. Walker.  
*TURKEYS*.—1 and 3, J. Walker. 2, Rev. W. J. Hilday. *hc*, R. Macabster.  
*SELLING CLASSES*.—(*Dorkings, Cochins, Brahmas, Game, Duck, Geese, and Turkeys*).—*Cock*.—1 and 2, W. Sowerbutts. 3, G. Anderton. 3, Duke of Sutherland. *c*, J. Walker. *Ducks*.—1, Duke of Sutherland. *c*, W. Chell. *Hen*.—1, J. Walker. 2, H. Goodfellow. 3, Rev. F. Dutton. *hc*, H. Beldon. *c*, T. A. Dean.  
*SELLING CLASSES*.—(*Spanish, Polish, Crève Coeurs, Houdans, Any other variety, Game, Hamburgs, and Bantams*).—*Cock*.—1, Mrs. Cooper. 2, T. Boulton. 3, J. Walker. *hc*, M. S. Beighton; E. Newbitt; E. Winwood. *c*, Duke of Sutherland; Rev. W. Serjeantson; J. Masbitt; Mrs. Cooper. *Hen*.—1, J. Walker. 2, Mrs. E. Allsopp. 3, H. Beldon. *hc*, J. F. Dizon. *c*, A. T. Waters; M. Cooper.  
*SELLING CLASS*.—(*Any Variety*).—1, H. Beldon. 2, E. Jackson. 3, J. Walker. *hc*, D. Gellatly. *c*, J. P. Parker; R. Newbitt.  
**PIGEONS.**  
*CARRIERS*.—1, E. Walker. 2 and *hc*, E. Horner.  
*POUTERS*.—1 and *hc*, E. Horner. 2, H. Yardley.  
*DRAGONS*.—1, H. Yardley. 2, H. Gamon. *hc*, H. Gamon; G. South. *c*, E. Horner.  
*ANTWERPS*.—1, W. Gamon. 2, C. F. Copeman. *hc*, W. Gamon; H. Yardley.  
*OWLS*.—*English*.—1, J. W. Townsend. 2 and *hc*, A. Mangnall. *hc*, J. Walker; H. Yardley; P. H. Jones. *Any other variety*.—1, P. H. Jones. 2, J. W. Townsend. *hc*, F. Wild; E. Horner.  
*FANTAILS*.—1 and 2, Rev. W. Serjeantson. *hc*, F. Loversidge.  
*NUNS*.—1, W. Crofts. 2, Rev. A. G. Brooke. *hc*, Rev. A. G. Brooke; E. Horner.  
*TURBANS*.—1, W. Crofts. 2, P. H. Jones. *hc*, W. Crofts; G. Taylor; E. Horner.  
*JACOBINS*.—1 and Extra, E. Horner. 2, J. Thompson. *hc*, G. South; E. C. Stretch; G. Taylor.  
*BARBS*.—1, E. Horner. 2, H. Yardley. *hc*, A. Maignall.  
*TUMBLERS*.—1, H. Yardley. 2, G. J. Taylor. *hc*, J. Fielding, jun.; E. Horner. *ANY OTHER VARIETY*.—1 and Extra, P. H. Jones. 2, G. J. Taylor. *hc*, H. Yardley; G. J. Taylor (2).  
*SELLING CLASS*.—1, R. White. 2, E. Horner.  
**RABBITS.**  
*LOP-EARED*.—1, Extra, and 2, F. Banks. *hc*, T. Hargreaves, jun.; A. Woodall; E. Frost; F. Parer.  
*HIMALAYAN*.—1, W. Whitworth. 2, Messrs. Hackett. *hc*, Messrs. Leggett; J. Rind; A. R. Hulms; W. Whitworth; C. G. Mason (2); J. Hallas; C. King; A. Tomlinson.  
*ANGORA*.—1, W. Whitworth. 2, T. Ball. *hc*, H. Sweetman; W. Whitworth. *ANY OTHER VARIETY*.—1, T. Allen. 2, W. Whitworth. *hc*, P. J. Allpress; W. T. Buchan (2); S. Butterworth.  
**CATS.**  
*TABBY*.—*Short-haired*.—1, Mrs. W. J. Nichols. 2, G. Ellis.  
*TORTIE-SHELL*.—*Colours to be Red, Yellow, and Black; no White*.—1, Mrs. W. J. Nichols. 2, W. Steele.  
*BLACK AND WHITE*.—*Evenly-marked*.—1, J. Upton. 2, F. J. Goodall.  
*WHITE*.—*To be entirely Black*.—1, Mrs. Brassington. 2, H. Austin. *hc*, J. Hince; W. L. Scott.  
*WHITE*.—*To be entirely White*.—1, T. W. Minton. 2, T. Barber. *hc*, G. Hines.  
*ANGORA OR PERSIAN*.—1 and Extra, Mrs. Potter. 2, S. Jones. *hc*, J. Hince.  
*LONG-HAIRED*.—*Black, White, or Tabby*.—1, Mrs. S. A. Pocock. 2, A. Adderley.  
*HEAVIEST*.—*Any variety or colour*.—1, Mrs. Potter. 2, E. Baxter.  
**JUDGES**.—*Poultry*: Rev. G. F. Hodson, Mr. Lowe, and Mr. P. H. Jones. *Pigeons*: Mr. Ridpath. *Rabbits and Cats*: Mr. P. H. Jones.

## CRYSTAL PALACE GREAT EXHIBITION OF CANARIES,

### AND BRITISH AND FOREIGN CAGE BIRDS.

It had so chanced that until Monday last I never had seen "the Palace Canary Show," as it is colloquially called, but I had always wished to be there, especially since one "W. A. B." had written such graphic accounts thereof. I had always thought that the fairy songster of the parlour would be so much in his place in the fair Palace of glass; and then the pert little rascal is always so much at home wherever he is. Talk of a cat always falling on his legs! pias is nothing to a Canary, who, give him his cage, is at once at his ease and ready to see company. Give him his cage—that is the point, for that is home, his house, his castle; out of it he is but a poor weak-winged flutterer.

I had often seen the Palace Poultry Show, and thought the blithe Pantam more wholly at his ease than the huge Brahma; and that Mrs. Dorking seemed to be dreaming—day-dreaming, with wide-open thoughtful eyes, of the farmyard. Then as to the great Pigeon Show. Although the many-plumaged Doves seemed more at their ease, especially when in pairs (a peculiarity I have noticed also in the human species), yet Mrs. Fan, or Mrs. Jack, or Mrs. Almond might be supposed to have their thoughts upon the nest in the corner of their loft, where their partners murmur sweet sounds of affection into very willing ears. But Mr. Canary, the bachelor "Dick" of thousands of parlours, is quite a cosmopolitan, and with a saucy look of his saucy face, and a wag—no, a jerk, of his saucier tail, looks round at a show as much as to say, "Here I am again, as good as you, only—better."

Climbing the many steps ascending the long sloping wood walks leading up to the Palace, I enter at the extreme west. I

like to enter there, for there I entered some dozen or more years ago, when the Palace was new, and new to me. But I must on inquiry walk right on to the other end. Tramp, tramp, past organ and past theatre. And what now, Mr. Wilson? A pretty tent-like structure ornamented with flags—a roof within a roof, with crimson curtains drawn tastefully back: what meaneth this Arabian-Night-like pavilion? Hark, the song of the birds! Why, here must be the Canary Show! Two grand and grave but gandy Macaws are at the entrance, guarda over the little ones within. The sides are green baize. A line of cages, and above a line of cages; not one on the top of the other, but, with good taste, Mr. Wilson, the top row placed a little backward; then two gangways in the middle, and on either side birds; while with perfect taste Mr. Williams, the head gardener of the interior of the Palace, had introduced here and there masses of flowers, now breaking pleasantly the long line of the cages, then with shrub and statue occupying the centre.

In 1873 the number exhibited was 1063; now, in 1874, the numbers have advanced to 1269.

First, as I enter on the right hand come, on the lower tier, the Clear Yellow Norwich. Now my readers must understand that the Norwich birds are here most properly divided into the usual old variety, and the "high-coloured" birds of the Bemrose-and-Orme manufacture, or I may call them into non-peppered and peppered birds. This is fair and wise, and I hope every exhibitor will honestly enter actually and really non-peppered birds in the non-peppered classes.

Class 1, Clear Yellow Norwich.—Sixty-seven entries and only three prizes! My first feeling is pity for the Judges, for so many were so level in goodness. I would remark, that a capital plan has been adopted by Mr. Wilson to guide the eyes of the spectators. He, Mr. Wilson, hangs up a large card at the ending of a class and the beginning of another, marking-off each class plainly. Hence, testy old gentlemen, white-whiskered and spectacled, were not heard so frequently grumbling, "Confound it, I can't make out whatever class I have got to." The Norwich birds ran through the usual courses—Clear Yellow, Clear Buff (N.B.—Please drop that word "huff," good fanciers; "mealy" is surely a better word); then Best-marked or Variegated Yellows and Buffs, and Ticked or Unevenly-marked Yellow and Buff. I looked with pleasure upon many in all these classes. Then I try to keep all these in my mind's eye, and I now pass over to the high-coloured, the peppered, which before I would not purposely look at, and I must own (and mark, I had never seen a peppered bird before), the contrast is wonderful.

"Tis as moonlight unto sunlight,  
And as water unto wine."

Messrs. Bemrose & Orme, or whoever may have discovered this art of feeding, have developed a new colour rather than intensified an old one, and a most splendid colour it is. There hops before one in perfect health a peppered and peppery little gentleman, who looks as if he mnat, from his plumage, belong to the tropics, and not to our cold climate. We must remember that this colour has come from fair means, and that there has been no painter or dyer at work, and that chemicals were tried in vain. This new colour marks an advance in the fancy. Would that among Almond Tumblers or any Pigeons there could be a like advance. Of course, the "peppered birds" are as yet a minority. One wonders how the little rascals' throats can have borne all the cayenne, when one thinks how we should shrink from a spoonful in a like little quantity of our food. I will defy anyone to imagine the beauty of these birds, sight alone does in this matter. I pass on to that good old variety the Crested, here well represented in all their varieties. Then come the Belgians, birds of peculiar forms and peculiar habits as well. A Belgian's cage should be on high legs for the fancier to be able to scratch or tap at the bottom. This excites Mr. Belgian, who forthwith begins to set-up his shoulders and poke down his head, and present, save to the enthusiastic fancier, a ludicrous picture of deformed curiosity. The pretty London Fancy was well represented, but not, numerous, and the birds were, I was pleased to see, entered as "Jonque" and "Mealy." Next came the Lizards, surely one of the very prettiest of the Canary tribe. What cage bird can be prettier than a clear-capped Golden Lizard? with his golden cap on he is set off as none other Canary is. Nor are the sober-liveried Silvers much less pleasing. Would but the Lizard's colour last year after year, he would be as popular as his Clear Norwich brother. For Broken-capped Lizards I have no word of praise, they are like the off-colours in show Pouters. Cinnamons were abundant and good. There were a few, very few, Yorkshire birds, chiefly remarkable for their large size, and coarser shape and look. Among the Any other variety were a few Manchester Copeys and Green Canaries and others.

Next came some exquisite Goldfinch Mules. Mr. Doel's alone were worth all the journey from Wiltshire to look at. Somehow there is a look and style about his birds which is unapproachable. I believe he never shows anywhere else. His Mealy Goldfinch Mule cock, No. 617, was the most beautiful Mule I ever saw, so evenly marked in eye and wing. Nos. 608,

609, and 618, Mr. Doel's, were also very beautiful. There were besides many Mules which were strikingly handsome, both Light and Dark. There were also three Black Goldfinch Mules, literally black—partly cases of hempsed, doubtless. There was a Bullfinch and Goldfinch Mule, form of the former chiefly, colour of the latter chiefly; Siskin Mules, Greenfinch Mules, &c.

Cages containing six Canaries follow; then come Bullfinches, Goldfinches, Linnets, Siskins, Redpolls, Skylarks, and Robins, Oh! Bobby Robin, I would rather not have seen you caged, though Miss Robinson's cages, cottage-shaped, are neat, warm, and show good taste in make and usually in colour. Blackbirds and Thrushes, Starlings—one, No. 831, seems to be a most talkative gentleman—two Magpies, and one Jay, three Jackdaws, and oh! had taste, in black cages. Contrast, contrast, good exhibitors, is what is wanted.

Among the Any other variety of British birds were a pair of Bearded Tits, the lady most properly not bearded; a brown cock Blackbird, a good solid brown colour; two Choughs sent by Lady Dorothy Nevill, Bramble Finches, &c.; No. 855, a good collection of British Finches, thirteen varieties; several Snow Buntings, Mealy Linnets, &c., and a pair of Blue Tits in a cage of virgin cork, a most snug-looking abode; a few Blackcaps, and one Nightingale, and he had no tail! So much for the British birds.

#### FOREIGN BIRDS.

These were highly ornamental. Among them glowed Red-headed Cardinals, Australian Parakeets, a most splendid crimson-winged Parrot (No. 924), and a Rosella Parrot (No. 923), these two perhaps the most beautiful of all the larger birds in the Show; King Parrots and Indian Parakeets, and the good old-fashioned African Grey Parrot, as a talker unequalled—these birds are now dear, as none have been imported, owing to Ashantee and other African troubles, for the last two years; Cockatoos of many kinds, looking as if they could say anything if they chose. There were many smaller foreign birds—an Orlotan, suggestive of gourmands; a Solitary Thrush, possibly "the Sparrow that sitteth alone on the housetop" of the Bible; a Mocking Bird, Avadavats, and many others; a Saffron Finch (No. 996), which looked a likely bird to cross with the Canary; and a great crowd of other small foreign birds. There was in addition, and rightly, a large Selling class, so that anyone whose fancy led him to buy could at once carry out his wish.

In conclusion I would strongly recommend a uniformity of cages. At present the rows resembled the houses of most London streets—one tall, the next short; one narrow and high, the next broad and low. Also the cages should be warm, wooden back and sides, and wire front. I was glad that I saw no treadmill cages, and only one poor bird braced round the body and obliged to pull up a little wagon to get food and a bucket to get water; this a mere ingenious piece of cruelty to be reprov'd, not praised. All the arrangements reflected the highest credit upon Mr. Wilson, who afforded by this Show pleasure to thousands.—

WILTSHIRE RECTOR.

NORWICH (Clear Yellow).—1, Bemrose & Orme, Derby. 2 and Extra 3, P. Flexney, Market Street, Caledonian Road, London. 3, W. Walter, Winchester. *chc.* J. Tarr, Thame, Oxford. 4, H. & D. Audley, N. P. Flexney (3); J. P. Gale, Colchester; J. Adams, Coventry; Bemrose & Orme; W. Walter; Alden and Havers, Norwich (2); *hc.* J. T. Gale; J. Athersuch & Son (2); J. Bexson, Derby; J. Adams (2); R. B. Newsom, Bromley Common (3); Bemrose and Orme; T. Fenn, C. J. Meredith, Kingston-on-Thames; J. Adams (3); T. Newmarch, jun., Crystal Palace (2); T. Fenn, Ipswich (4); G. & J. Mackley, Norwich (4).

NORWICH (Clear Buff).—1, W. Evans, 2, Bemrose & Orme. Extra 2 and Extra 3, W. Walter, 3, P. Flexney. *chc.* J. Doel, Stonehouse (2); P. Flexney; J. Adams; Bemrose & Orme. *hc.* P. Flexney; J. T. Gale; R. B. Newsom (2); T. Smeeton; Bemrose & Orme; Moore & Wynne, Northampton (2); G. & J. Mackley. C. J. Doel; J. Meredith; H. & D. Audley, Leicester; J. Bexson (2); W. Corden, Dartford; Mrs. Judd, Newington Butts; T. Fenn; Alden & Havers; G. & J. Mackley.

NORWICH (Marked or Variegated Yellow).—1 and 3, Bemrose & Orme. 2, J. T. Gale, 3, J. Athersuch & Son. *chc.* J. Doel, Athersuch & Son; Bemrose and Orme; W. Walter. *hc.* J. Adams (2); Alden & Havers. C. J. Bexson; J. Caplin, Canterbury; Alden & Havers (2); G. & J. Mackley (4); S. Tomes.

NORWICH (Marked or Variegated Buff).—1 and 2, Bemrose & Orme, 3, J. Adams. *chc.* H. & D. Audley; J. Athersuch & Son; J. Adams; Bemrose & Orme; G. & J. Mackley. *hc.* J. T. Gale; W. Richards, Bulwell, Notts; J. Adams; Athersuch & Son; R. B. Newsom; T. Smeeton; G. & J. Mackley. C. J. T. Gale; S. Tomes; C. T. Gale; H. & D. Audley; J. Bexson (2); G. & J. Mackley (2).

NORWICH (Ticked or Unevenly-marked Yellow).—1, P. Flexney. 2, P. Flexney. 3, J. Bexson. Extra 3, Bemrose & Orme. *chc.* P. Flexney; J. Adams (5); S. Tomes; T. Smeeton, Nottingham. *hc.* J. Meredith (4); J. Athersuch & Son; J. Bexson; J. Adams (8); T. Newmarch, jun.; Bemrose & Orme; R. B. Newsom; W. Walter. C. J. Meredith; J. T. Gale (2); A. Colman, New Catton (2); Alden & Havers; G. & J. Mackley (2).

NORWICH (Ticked or Unevenly-marked Buff).—1 and Extra 3, Bemrose and Orme. 2, J. Doel. *chc.* J. Adams (2); J. Adams. *hc.* W. Richards; J. Baxter, Nottingham; S. Tomes; C. J. Adams; W. Walter; A. Colman.

Winners of the Extra Prize in the first six classes of Norwich Canaries, Bemrose & Orme.

NORWICH (Clear and Ticked, High colour).—1, 2, 3, and Extra 3, Bemrose and Orme. Extra 2, J. Athersuch & Son. *chc.* J. Athersuch & Son; Bemrose and Orme; T. Tenniswood, North Acliam. *hc.* J. Athersuch & Son; J. Adams; Bemrose & Orme; Bemrose & Orme (2); G. & J. Mackley.

NORWICH (Marked or Variegated Norwich, High colour).—1, 2, 3, and *chc.* Bemrose & Orme, C. J. Adams.

NORWICH (Marked or Variegated Crested Yellow).—1 and *hc.* P. Flexney. 2, W. Walter, Tabernacle Walk, Finsbury, 3, G. & J. Mackley. C. J. Packham, Beedington Corner; G. & J. Mackley.

NORWICH (Marked or Variegated Crested Buff).—1, G. Wones. 2, J. Tarr. Extra 2, P. Woodward, Litchburn, & H. & D. Havers. 3, J. Shield, jun., Havensdown, Berwick-on-Tweed; Alden & Havers. *chc.* Edge Judge, Derby. H. Gibbs, South Brent; S. Tomes; Bemrose & Orme; J. Caplin; Martin and Griffin; Alden & Havers; G. & J. Mackley. *hc.* J. Tarr. G. H. Goulter (2); J.

Goode; J. Adams; Moore & Wynne; Martin & Griffin; Alden & Havers. C. G. H. Goulter, Northampton (2); S. Tomes; Mrs. Eagle; T. Fenn; G. & J. Mackley. H. Goulter, Northampton (2); S. Tomes; Mrs. Eagle; T. Fenn; G. & J. Mackley. Alden and Havers. 3, Brown & Gayton. 3, J. Bexson. Extra 3, Martin & Griffin, Northampton. *chc.* N. Walker, Long Acre, London; F. Woodward; R. E. Triffitt, York; S. Tomes (2); T. Fenn. *hc.* J. Devaney; J. Baxter. C. Mrs. A. M. A. Stephenson, Bishop's Cleeve, Cheltenham; N. Walker; Alden and Havers (2); G. & J. Mackley (2).

BELOIAN (Clear and Ticked Yellow).—1, J. Doel. 2, R. Hawman, Middlesbrough. Extra 2, J. Rutter, 3, R. Hawman. Extra 3, H. Gibbs (2); Mrs. J. Chinery, Wootton. *chc.* J. Doel; Mrs. Dearing. *hc.* J. Doel; R. Hawman; J. Rutter.

BELOIAN (Clear and Ticked Buff).—1 and 3, H. Gibbs. 2, Extra 2, and *hc.* J. Rutter. *chc.* J. Doel (2); H. Gibbs; J. Rutter; G. & J. Mackley. C. J. Doel.

BELOIAN (Variegated, irrespective of Colour).—1, 3, and *hc.* J. Rutter. 2, J. Hickton, Sutton-in-Ashfield. *chc.* J. Hickton (2); J. Rutter.

LONDON FANCY (Jonque).—1 and 2, T. Clarke, Sutton, Surrey. 3 and *chc.* J. Waller, Tabernacle Walk, Finsbury. *hc.* T. Clarke; J. M. Wilson, Fimico; J. Waller (2). C. T. Clark; J. Price.

LONDON FANCY (Mealy).—1 and 3, T. Clark. 2, W. Brodick, Chudleigh. *chc.* T. Clark; W. Brodick; J. McMillin, Hornsey. *hc.* T. Clark; J. McMillin (2). C. T. Clark; J. Price; J. McMillin.

LIZARD (Golden-spangled).—1 and 3, W. Watson, jun., Darlington. 2, T. Dove, Sutton-in-Ashfield. Extra 3, J. Martin. *chc.* T. Haywood, Nottingham; J. Hickton; G. & J. Mackley (2); *hc.* T. Haywood, Sutton-in-Ashfield; T. Armstrong, Rochdale; T. W. Fairbairn, Canterbury. C. T. W. Fairbairn.

LIZARD (Silver-spangled).—1, W. Watson, 3, T. W. Fairbairn, 3, J. Shackleton. *chc.* Rev. V. Ward, Hythe; T. W. Fairbairn; G. & J. Mackley. C. G. & J. Mackley.

LIZARD (Gold or Silver-spangled, with Broken Caps).—1 and *hc.* T. W. Fairbairn. 2 and C. W. Watson. 3, C. Hibbs, Kiburn. *chc.* Rev. V. Ward; T. W. Fairbairn.

YORKSHIRE (Clear-marked or Variegated, irrespective of Colour).—1, 2, 3, and *chc.* L. Belk, Dewsbury. *hc.* J. Stephens, Middlebrough.

CINNAMON (Jonque).—1 and Extra 2, J. Adams. 2, Bemrose & Orme, 3, J. Bexson. Extra 3, J. Stephens. *chc.* W. G. Warren, Blackheath Hill; J. Bexson; W. Corden. *hc.* W. Corden; Cox & Hilliers, Northampton; Moore and Wynne; F. M. Fellingham, Brighton; J. Waller (7); G. & J. Mackley, C. J. Waller; G. & J. Mackley (2).

CINNAMON (Buff).—1, J. Adams, 2, Bemrose & Orme, 3, G. & J. Mackley. Extra 3, J. Bexson. *chc.* J. Bexson; J. Adams; Cox & Hilliers; Bemrose and Orme; T. M. Fellingham. *hc.* Edge & Judge; W. Raynes (2); W. Corden (4); W. Waller (3); J. Waller (2); G. & J. Mackley. C. J. R. Naylor, Chatham (2); W. Corden (2); Moore & Wynne; J. Waller (3).

CINNAMON (Marked or Variegated, irrespective of Colour).—1 and 2, Withheld. 3, Bemrose & Orme. *chc.* R. Sandell, New Cross Gate, London; T. Armstrong, Greenwich. *hc.* L. Belk, Dewsbury. *hc.* J. Bexson.

ANY OTHER VARIETY. —1 and 3, Withheld. 2, W. W. C. Selkirk. *chc.* Moore and Wynne; J. Baxter (Scotch Janey). *hc.* L. Belk; C. A. Jones, Lewisham (Jonque Crested); J. Baxter.

GOLDFINCH MULE (Evenly-marked Yellow).—1, 2, and *chc.* J. Doel. 3, T. Fenn. Extra 3, R. Hawman. *hc.* G. & J. Mackley.

GOLDFINCH MULE (Evenly-marked Buff).—1 and 2, J. Doel. 3, T. Fenn. *chc.* H. Gibbs. *hc.* J. Doel; W. Barnard; G. & J. Mackley. C. J. Doel. 3, J. Brown, jun., Penrith. *chc.* J. Doel; J. Goode, Leicester. C. J. Doel (2); Alden & Havers.

GOLDFINCH MULE (Any other class of Buff).—1 and C. J. Doel. 3, J. Brown, jun. *chc.* G. & J. Mackley. *hc.* E. Waller, Northampton; T. Tenniswood; Alden and Havers.

Winner of the Silver Cup in Goldfinch Mule classes, J. Doel.

GOLDFINCH MULE (Dark Jonque).—1, Bemrose & Orme. 2, and C. Cox and H. Havers. 3, Mrs. Dearing, Chatham. *chc.* Brown & Gayton, Northampton; W. O. Hayes, White Street, Borough; G. & J. Mackley. *hc.* J. Goode; W. O. Hayes.

GOLDFINCH MULE (Dark Mealy).—1, W. Evans. 2, Cox & Hilliers. 3, G. and J. Mackley. *chc.* Cox & Hilliers; Moore & Wynne; G. & J. Mackley. C. C. Varetto, Clapham; A. Waterworth, Shipley.

MULE (Linnets).—1, J. Stevens. 2 and *chc.* J. Spencer, South Shields. 3, W. Hutton, Ballon.

MULE (Any other variety).—1, J. Doel. 2, W. Hutton. 3, R. Sandell (Siskin). *chc.* J. Doel (2); Miss J. Stapleton (Bullfinch). *hc.* J. Baxter, Newcastle-on-Tyne. C. R. J. Troake, Clifton, Bristol (Greenfinch and Canary).

NORWICH (Six in one Cage, irrespective of Colour).—1 and 2, W. Walter. 3, G. and J. Mackley. *chc.* J. Meredith (2); I. Garrett, Brighton; J. Caplin; G. and J. Mackley. *hc.* J. Meredith (3); I. Garrett. C. J. Meredith.

LIZARDS (Six in one Cage, irrespective of Colour).—1, W. Watson, jun. 2, J. M. Hutton, 3, Mrs. J. Doel. 2, W. Hutton. 3, Rev. V. Ward.

GOLDFINCH MULES (Six in one Cage).—1 and 3, J. Doel. 2, W. Hutton. *chc.* W. Bates, Nottingham; J. Baxter.

MISCELLANEOUS.—Prize, Brown & Gayton; J. Baxter.

BULLFINCH.—Prize, J. Drake. *hc.* T. Willsher, Chichester; J. Drake; G. and J. Mackley. C. Broom & Gayton; Mrs. Kettle, Kensington.

GOLDFINCH.—Prize, R. J. Troake. *hc.* J. Meredith; J. Prosser, Derby; W. Price, Blackheath. C. H. Brown, Northampton.

LINNET.—Prize, R. Hawman. *hc.* A. G. Bragger, Lambeth; W. & C. Burniston. C. J. Spencer; G. & J. Mackley.

REDPOLE OR SISKIN.—Prize, Rev. J. P. Bartlett, Southampton. *hc.* D. Knight; Brown & Gayton; W. Walter. C. R. Sandell; T. Willsher; J. Drake, Ipswich.

SKYLARK.—Prize, W. Walter. *chc.* J. S. Benton, Rochester. *hc.* T. Freeman, C. Mrs. Judd.

ROBIN.—Prize and *hc.* Miss M. A. Robinson. C. Brown & Gayton; J. Drake. BLACKBIRD.—Prize, R. W. Alwin, Deptford. *hc.* A. W. Sweeting, Sydenham.

S. Bramley, Laurie Park; G. & J. Mackley. SONO TITMATE.—Prize, A. W. Sweeting. *chc.* W. Walter. C. W. Ireland, Anerley; Mrs. E. Gallo.

STARLING.—Prize, T. Dove. *hc.* Miss E. Hawkins, Bear Street, Leicester Square. C. Mrs. Judd; G. & J. Mackley.

JACOBIN.—Prize, Miss M. A. Robinson. JAY.—Prize, G. & J. Mackley. JACKDAW.—1, Miss M. A. Robinson.

BRITISH BIRDS (Any other variety).—Prize, J. Young, Notting Hill (Bearded Tit); J. Pratt (Brown Blackbird); Lady D. Nevill, Dangstien (Chough). *chc.* Rev. T. S. Carte, Torrington Square, W.C. (British Finches); E. Martin (Blue Tit); A. Skinner, Islington (Pied House Sparrow, Pied Linnet, and Mealy Linnet). *hc.* Mrs. E. Gallo (Pinnock); Miss M. A. Robinson (Brambling); Mrs. W. Mestyn, Good-hel (Yellowhammer); Mrs. W. H. Alcorn, London (Pied Goldfinch); J. Drake (Black Bullfinch); W. Walter (Woodlark and Mistle Thrush); G. & J. Mackley (Pied Sparrow). C. J. C. Higgs, Leather Lane, E.C. (Hedge Sparrow); Rev. T. S. Carte (Snow Bunting); A. Skinner (Woodlark); T. Newmarch, sen. (Snow Buntings); and G. & J. Mackley (Snow Bunting).

BIRDS OF PASSAGE AND MIGRATORY BIRDS. BLACKCAP.—Prize, J. Young. *chc.* C. Varetto (2).

NIGHTINGALE.—Prize, G. Coram, Cambridge. ANY OTHER VARIETY OF BRITISH BIRDS.—Prize, C. Varetto (Titlark).

FOREIGN BIRDS. WIDAR BIRDS.—Prize, G. & J. Mackley. *hc.* W. Walter. CARDINAL (Red).—Prize, J. Young. *chc.* Miss M. Hawkins. NIGHTINGALE (Any variety).—Prize and *hc.* T. Newmarch, jun.

WAXBILLS (Any variety).—Prize and *hc.* W. Walter. SPARROWS (Java).—Prize, Mrs. Judd. *chc.* C. B. Budd, Clapham. *hc.* T. Newmarch, jun.

**SPARROWS** (Crown-necked).—Prize, W. Walter.  
**SPARROWS** (Diamond).—Single.—Prize, W. Walter. c, Mrs. Judd.  
**DOVES** (Small).—Prize, Rev. A. Johnson, Horselydown. c, H. Small, Sydenham; — Drake.  
**DOVES** (Barbary or King).—Prize and c, J. Lenthford, Lower Norwood. hc, H. Small.  
**LOVE BIRDS**.—Prize, W. Walter.  
**PARAKEETS** (Australian Grass).—Prize, Miss M. Hawkin. vhc, W. Walter.  
**COCKATEALS**.—Prize, Mrs. Miller, Upper Norwood. hc, T. Newmarch, jun.  
**PARROTS OR PARAKEETS** (Any other variety of Small).—Prize, Rev. A. Johnson (Turquoise). hc, Mrs. Mostyn, Sydenham (Parrots from St. Edward's Island). c, Miss W. Pope, Sydenham (Seegal Parrots).  
**PARAKEETS** (Australian or Broad-tailed).—Prize, Mrs. C. E. Sambrook; J. Rawley (Crimson-winged Parrot). hc, T. Newmarch, jun. (Cockateal). c, T. Newmarch, jun. (Mealy Cockatoo).  
**PARAKEETS** (King-necked or Indian).—Prize and c, T. Newmarch, jun. vhc, A. Bell. hc, Miss Cart, Brixton.  
**PARROTS** (King).—Prize, Master J. S. Harrison, Spalding.  
**PARROTS** (Green, or any other variety of large, except Grey).—Prize, Miss W. Pope (Green Eagle-eyed Spectacled Parrot).  
**PARROTS** (Grey).—1, Miss S. Benbow, Wallington. 2, Mrs. Judd. hc, R. Theobald, Brompton Road. c, D. Child, Upper Norwood.  
**COCKATOOS** (Any other variety).—Prize, T. Newmarch, jun. (Slender Bill). c, A. Vicars (Forest Hill).  
**COCKATOOS** (Leadbeater or Rose-breasted).—1, W. Walter. 2, A. Vicars. c, T. Clapham, Muswell Hill.  
**COCKATOOS** (Lemon or Orange-crested).—1, M. George. 2, J. Meredith. c, H. Cross, South Norwood.  
**ANY OTHER VARIETY**.—Prize, Mrs. E. Gallo (Rock Thrush). Equal Prize, Mrs. Riley, Notting Hill (Mocking Bird); J. Cross (Chilian Starlings); Miss Hawkins (King-necked Sparrows). vhc, R. Woolward, jun., East Brixton (South American Magpie); Miss M. Hawkins (Lesser Pekin Nightingale and Greater Pekin Nightingale); T. Newmarch, jun. (Blood-winged Parrot); Rev. A. Johnson (Australian Barwing Doves). hc, Mrs. W. Mostyn (Australian Banded Finches); E. Sweeting (Madagascar Finch); Mrs. F. Ford (Indian Avadavats); Mrs. Judd (Indigo Blue Birds); T. Newmarch, jun. (Spice Birds); W. Walter (Saffron Finch); T. Newmarch, sen. (Bronze Manikins and Avadavats); Rev. A. Johnson, c, Mrs. E. Gallo (Blue Solitary Thrush); T. Newmarch, jun. (Chesnut Finch and White Banded Manikins); J. Newmarch, sen. (Black-headed Manikins and Silver Bille).  
**JUDGES**.—*Canaries*: G. Barnesby, Esq., A. Willmore, Esq., T. Moore, Esq. *British and Foreign Birds*: H. Weir, Esq., J. J. Weir, Esq., assisted by F. W. Wilson, Esq.

## BEE-FEEDING EXPERIENCES—REMEDY FOR BEE STINGS.

In October last I bought my first hive of bees—an old-world cottager's hive. Having no experience, and relying entirely on "book-learning," I came to the conclusion that it was "light," and required feeding. I tried troughs outside the hive, but as this method required constant attention to renew the supplies, and attracted robbers of all kinds (where do the hosts of blow-flies come from?), I was compelled to abandon this plan. I then cut a hole in the top of the hive, and applied one of Neighbour's circular troughs with a floating stage; but the cold weather was upon me, and the bees only mounted into it in small numbers; some of these even were chilled, and never returned to the hive. This plan also failed. I then saw that one of your correspondents advised the feeding of light hives in a greenhouse. Evidently it was the very thing for me. The hive, therefore, was duly removed on a memorable Saturday night to my little greenhouse, the food duly placed, and I went to bed as happy as the proverbial sand boy. Well, I admit Sunday is not an early day with me. I was not suffering from bees on the brain, and I slept. My first care was my bees. Oh, horror! The weather, instead of being November, was May; the sun shone brightly, the bees hummed merrily out of the hive, and bumped and thumped against the wet glass. Then they were chilled, and fell by hundreds between my flower pots, and thence on to the colder floor. I gathered up my darlings, warming them in my hands, or in boxes before the fire, before replacing them in the hive. They behaved very well to me, for I was innocent of bee-dress and gloves, and during that seven-hours work, having handled hundreds of bees, I received but two stings—one through having slightly pinched my friend, and one from a vixenish party on the forehead. I had had enough of that, and the bees were that same night relegated to the garden, and invited, in the words of Montalembert, "to take a bath in the free air of England."

But still the bees must be fed, and one of your correspondents suggested the plan of all others that suited my case. He said a light hive might be kept in the kitchen, and fed, if the entrance to the hive were closed. A piece of perforated zinc was accordingly obtained, the entrance carefully barred, and yet fresh air secured.

The hive of much-suffering bees was again removed to the greenhouse—temperature 45°. There they remained a week, carefully watched night and day, feeding but little, and showing signs of anger that they were prisoners. At last one unhappy day, I left home early without looking at them, and returned late at night. To my question, "How are the bees?" I received the reply, "Oh! I forgot to look at them, father." "Then I will. Come on." I raised the woollen covering from the feeding trough, and found it full of one solid mass of drowned and drowning bees. Their weight had forced the float downwards, and they were struggling in the food which I in my fondness had placed for their sustenance. It was evident that something must be done to liberate them, and to-morrow again was Sunday. I took them to the potting board, removed the zinc and the

feeding trough, and out they streamed in hundreds on that memorable December night. There they were left till the morning. I then raised his hive from the floor board, and found it fairly covered with dead bees and a large quantity of honey. On turning the hive up I found about fifty cowed and dispirited bees and seven large combs. About one-half of these were unsealed, and some of the cells contained brood. So ended my first attempt at bee-keeping. We treated our dead bees with all respect, and having held an inquest, we returned the verdict of "killed by kindness."

Since then I have studied Esop, and commend to the perusal of amateur bee-keepers the wise old story of the man and his ass, which means that I shall let my next lot of bees take care of themselves, while I correct my experience by the suggestions of your contributors. If the recital of my failures help to warn others from sunken rocks I shall greatly rejoice. I have made one discovery—that a preparation of *Ledum palustre* (Labrador Tea) homœopathically prepared is a sovereign remedy for bee stings.—BEATEN BUT NOT DISMAYED.

## FOUL BROOD IN HIVES.

It is believed that the late Mr. Woodbury ("DEVONSHIRE BEE-KEEPER") exerted himself more than any other British apiarist to find out the mysteries of this terrible disease. By his own researches and investigations he examined the subject as far as he could. He not only discussed the question in these pages, but translated for their readers long and elaborate papers from German writers on the disease. From the time when he and I became acquainted with each other a very close and friendly correspondence was kept up between us till he died. In looking over a pile of his private letters to me lately, two things struck me forcibly—viz., his loyalty to truth and THE JOURNAL OF HORTICULTURE. In all his private and public correspondence I never found that he ever overcoloured or undervalued the opinions of those who differed from him, or ever indulged in personalities. His constant aim was to find truth, and enlighten the readers of this Journal. Frequently he begged me to contribute articles to its pages, and once or twice he sent me the proof-sheets of his translations from the German. The views held forth in these papers did not appear to satisfy his inquiring mind, and he asked me for mine on the subject of foul brood. I told him my opinions on this question were not entitled to much respect, for I had not given much time to its investigation; and that all my life I have thought that much of foul brood found in hives has been caused by either improper food or imperfect feeding. The expression of this opinion seemed to give him great pleasure and fresh food for thought; for in a day or two afterwards he wrote me a complimentary letter.

When the reader is informed that, in my opinion, much that has been said and written on the cause of foul brood is simply hypothetical—mere guessing, he will not expect to receive from me much information or dogmatic teaching on the subject. All I shall attempt is to describe the appearance of foul brood, and the course it generally runs.

Foul brood in bee hives is an incurable malady. From some cause, and in some seasons more than others, larvæ or half-hatched bees perish in their cells. These cells are at first separate from each other, and are covered with lids concave in form; the lids of healthy normal brood are convex or rounded. The cells of dead brood multiply fast, and by reason of their numbers come in contact with one another. This disease does not appear to spread by contact or touch, but by the multiplication of cells all over the brood combs. The matter in the cells is of a dirty red colour, as thick as honey, and almost as offensive to the smell as rotten eggs. The matter of foul brood is so putrid and offensive to bees that all prosperity departs from hives in which it is found; indeed the bees of infected hives frequently abandon them, and go off as swarms; sometimes they creep underneath their boards and build their combs there. Of course experienced bee-keepers do not keep diseased hives till they become uninhabitable. The stench of this disease can be easily smelt outside the hive, and symptoms of its existence may be seen in the conduct of the bees.—A. PETTIGREW, Sale, Cheshire.

(To be continued.)

## OUR LETTER BOX.

**BOOKS** (Subscriber, C. Fold).—Brent's Canary Book. You can have it free by post from our office if you enclose 19 postage stamps with your address.

**NEWCASTLE-UPON-TYNE SHOW** (J. P. Carver).—No doubt you could recover from the Committee the money for which your birds were sold; but there are too many circumstances needful to be known to justify us in advising you. Consult a solicitor.

**KITCHEN SHOW**.—Mr. Haines says his Light Brahma cockerel was one that took second prize at Manchester and Bristol.

**FARNHAM SHOW**.—The following information occurred in the prize list of this Show—viz, Game, any other variety, Hen.—hc, H. P. Pamel-Price (Pile).

**SHELL-LESS AND IMPERFECT EGGS** (J. K. L.).—It is always considered the hen forms the egg internally, but the shell requires assistance from without. Chalk and lime are materials in request. If such are not to be had in the runs of your poultry, supply them. The easiest and most effectual

method is to throw down a barrowful of bricklayers' rubbish near to their house. Throw it in a heap, it affords them amusement to get what they want. If your fowls have this, and are still in the habit of laying soft eggs, there is something wrong in their secretions. They are out of health. Either their food is at fault, or they lack something necessary for them. Your meagre information will not allow us to guess the cause. Soft food is the best for sitting hens. Creoles are not a distinct breed. Creels are much esteemed in some districts.

**COCHINS AND BRAHMAS (H. Cox).**—Glad to hear of some of our old birds. There are none such now. We never approve of crosses between sitters and non-sitters. We are not very friendly to any crosses, and believe that any reasonable expectations in the way of poultry may be realised with pure birds. We cannot say what the effect of a mixture of Dorking, Houdan, and Brahma would be, nor do we think you would from a sight of the birds. If you mean to cross, confine yourself to Dorking and Brahma. That will give you a good table fowl. We have no doubt you can get the Brahmas pullets you require at 25s. each, but we have left Winchester and are now Londoners. If you run Light and Dark Brahmas together they will do to eat or to make broth, but they will be useless as stock fowls. Judging from your letter we suppose you have two runs. Allot one to your pure Dark Brahmas for one reliable and saleable breed. In the other keep what you like. You must not mix Light Brahmas with White Cochins. You will lose comb, markings, and all that constitute a Light Brahma, while you will get a comb and black feathers in the Cochins that will make them valueless.

**COCKEREL'S FOOT CRUSHED (Dover).**—We should fear the bone is crushed or very seriously damaged. We should poultice while there was the discharge you mention, but as soon as that lessened we should keep the foot bandaged in its proper shape, and dressed with citric ointment. The ball of the foot may be injured by the fowl walking on it. In that case bind three or four splints round the leg, and let them reach half an inch below the foot. The bird will make a bad walk for a time, but if the foot gets well he will soon walk straight.

**BRAHMA PULLETS NOT LAYING (Brahma).**—We expect you will have eggs before you read our answer. For winter layers, pullets should be hatched in May. There is great difference in three months' growth, or in three months' approach to maturity. After June the days shorten, and the sun loses power. People will smile at this, but we will be judged by those who breed for a livelihood all the year round, and will ask them the difference in rearing April or June chickens. We see no fault in your feeding except the buckwheat. That is too fattening. Pullets naturally put on flesh and fat before they begin to lay. When over-fat they cannot lay. Anything that tends to make fat should be avoided.

**HEN DYING SUDDENLY (G. H. L.).**—There is nothing in your description of the dead hen that is inconsistent with "natural death." Such is not uncommon both in cocks and hens at this time of year. Did you find the egg-organs quite healthy? Death is often caused by straining to lay an egg that is impeded by fat.

**FENCE FOR POULTRY-YARD (J. H. T.).**—A 3-foot fence is insufficient to confine a Dorking cock at any time. You may render the exploit much more difficult by cutting all his light feathers down almost to the quill on one wing. Cut them as low as you can without causing bleeding, and cut off ten feathers. Constancy is not a gallinaceous virtue.

**LAYING OBSTRUCTED (F. T. L. T.).**—It is always a difficulty for a pullet to lay her first egg, and Nature seems to have provided it shall always be a very small one, probably the smallest she will ever lay. It is nevertheless voided with difficulty, and is always more or less streaked with blood. The treatment is to lubricate the vent with oil, and to continue till there is a plain action of opening and shutting. When this is seen the feather should be introduced still farther, and this should be repeated till the egg is laid. We never venture on an incision; we consider the ovary the most delicate part of a pullet's body. We see nothing to hinder the bird from laying her eggs and performing all the functions a good hen should do. Hens sometimes suffer in the same way, but that is generally caused by internal fever. The treatment is the same—a wing or tail feather saturated with oil, and introduced till it reaches the egg. No violence must be used, as a broken egg in the egg-passage is a fatal accident. Where the oil is freely used nature will do the rest.

**BREEDING AGE (J. P.).**—Much depends on the time of year at which the bird is hatched. A bird hatched in March, although only seven months old in October, is a stouter and more serviceable bird than one hatched in June will be in the following March. No cock should run with hens till he is six, or, better, seven months old, even if brought into the world under most favourable circumstances. You may safely set the eggs after he has been running four days or a week; the first is long enough if there is hurry. (You may keep twenty-five or thirty fowls.

**UNITING SWARM AND CAST (A Young Apiarian).**—You will certainly succeed in transferring all the bees from your straw to bar-frame hives by driving all out of the former on the same day as the first swarms leave them, and casting them together in any way you like. Better do it on the day of swarming than leave it for a day, or two later, for there is a peculiarity of smell in every colony of bees different from all others; and as bees know each other and strangers by smell, the swarms should be united before they become, as it were, separate families. The day after swarming may answer for the unions to take place, but the sooner it is done the better. There are so many ways of uniting swarms, that we hardly know which to suggest in your case. If you raise the bar-frame hives off their boards by wedges, and throw the bees from the old hives on the flight boards, or put the driven bees down so that they can pass out of the one hive into the other, they will speedily run into the bar-frame hives, and be received by their old comrades. There will be no queens amongst the second lots of bees taken so soon after the first swarms.

**A LARGE SUPER ON TWO HIVES (Idem).**—Two swarms will not work amicably in separate hives in filling a large super. Better have a super on each hive.

**HIVES (A.).**—The hives used by Mr. Pettigrew are made of straw, and are large, and neatly sewn. He uses three sizes—viz., 16, 18, and 20 inches wide inside, all 12 inches deep. He considers them incomparably better for bees than wooden hives, and better as storerooms for honey than straw hives with bar frames, but they are without windows. They are also very much cheaper than any other hive worth using in this country. No better bar-frame hive than Woodbury's can be obtained, for it is made of straw. We do not recommend makers of and dealers in hives. If you wish your supers filled with comb for home use, we would advise you to use those made of straw or wood without bar frames in them. They are not only cheaper with-

out frames, but very much better. Where honey is the object sought, complication in hives and supers should be avoided.

**CLEANING HIVE'S FLOOR-BOARD (W. E. M.).**—The best time of day for cleaning the floor-boards of your hives is early in the afternoon on a still and warm day. We should first of all break the hives from the boards (in bed dress and gloves) with a screwdriver or strong knife; then blow a little smoke (tobacco or brown paper) into the hive to quiet the bees. Then, having ready a new board, gently lift up the hive and place it on the board, which can be put exactly where the hive stood before. The old board can then be scraped and washed with hot water, and given to another hive, and so on through the apiary. The operation need not take more than two or three minutes in the hands of a skilful workman. If done carefully no serious disturbance of the bees can occur.

**ROASTED BIRDS FOR BEES (A. P.).**—You ask for our "readers' opinion as to giving sparrows and blackbirds (roasted) to bees for food," and say that "it is a common practice here in Ireland." You moreover state that "healthy hives with plenty of honey in them relish such food." Your statements are certainly novel to us. We never heard of bees taking to food of this kind; but there is no denying what you say, that, if these are facts, "however ridiculous it may appear, it cannot be unwise." Still we demur to the "facts." Have you seen the banquet with your own eyes? and can you tell whether the bees devoured bones and all? It may turn out that they merely licked the salt of the butter in which the sparrows were roasted.

**SUITABLE HIVE (A. D.).**—As you cannot devote much time to your bees, and therefore require a simple form of hive, we think you cannot do better than adopt an improved cottage hive. As the sight of such hives is better than mere description, we will refer you to our "Bee-keeping for the Many," which can be had from our office by payment of five stamps. Any hive-maker in your neighbourhood would construct your hives, if of straw, at a much cheaper rate than you could buy them by advertisement. What you seem to require is a plain flat-topped straw hive, with a hole in its crown and a esp or smaller hole at top. All this can be covered in the usual way with a straw covering, or "hackie," as it is called.

#### METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain.
1874. Feb.	Barom- eter at 3 p.m. and Sea level.	Hygroma- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature				
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
		30.475	25.0	25.0	S.	34.5	33.6	22.4	57.3	29.9	—	
		30.066	31.4	31.3	S.E.	35.6	42.2	24.3	42.4	19.5	0.012	
		30.048	46.7	45.6	S.W.	35.6	49.0	30.9	55.8	31.8	0.028	
		29.763	48.4	47.1	S.W.	39.7	51.7	46.1	61.6	44.5	0.015	
		29.457	48.1	46.7	S.W.	41.4	52.5	46.3	52.6	44.4	0.020	
		29.493	47.0	46.1	S.	42.3	48.3	44.3	55.0	41.6	0.055	
		29.293	43.8	42.9	S.	42.2	46.0	41.3	62.1	38.9	0.032	
Means		29.735	41.5	40.7		38.6	46.2	36.5	55.1	34.5	0.103	

#### REMARKS.

11th.—Very cold, but fair; a fine winter day.  
12th.—Rather thick in the morning, more so at noon, and continuing all day; very much warmer in the evening.  
13th.—Rain for a short time; dull all day, and rain again at night.  
14th.—Windy and boisterous in the fore part of the day and at night, but more calm in the middle of the day.  
15th.—Showery morning; fine afternoon.  
16th.—Rainy morning, and more or less all day.  
17th.—Wet uncomfortable morning, clearing off soon after noon; very pleasant in the latter part of the day.  
The temperature in all cases except underground and in sun nearly identical with the week before last, and about 10° above that of last week.—G. J. SIMONS.

#### COVENT GARDEN MARKET.—FEBRUARY 18.

THERE is no improvement to notice, the supplies being ample and the general trade very quiet; indeed, the higher class of business which usually prevails in London at this season, is nowhere to be heard of.

#### FRUIT.

	s. d.	a. d.		s. d.	a. d.
Apples.....doz	1	0 10 1	Oranges.....doz	4	0 10 12
Chestnuts.....bushel	10	0 20 0	Pears, kitchen.....doz	1	0 2 0
Filberts.....lb.	1	0 1 6	Onions.....doz	3	0 10 0
Beans, Kidney.....lb.	1	1 6	Pine Apples.....lb.	6	0 6 0
Cobs.....lb.	2	0 7 0	Quinces.....doz.	0	0 0 0
Grapes, hothouse.....lb.	0	12 0	Walnuts.....bushel	10	0 16 0
Lemons.....doz	1	0 3 0	ditto.....doz	100	2 0 2 6
Melons.....each	1	0 3 0			

#### VEGETABLES.

	s. d.	a. d.		s. d.	a. d.
Artichokes.....doz.	3	0 6 0	Mushrooms.....pottle	1	0 2 0
Asparagus.....doz	100	4 0 0	Mustard & Cress, punnet	0	2 0 0
French.....lb.	13	0 23 0	Onions.....bushel	3	6 5 0
Beans, Kidney.....doz	100	3 0 0	Onions.....picking	0	6 0 0
Beet, Red.....doz	1	0 6 0	Parsley per doz. bunches	4	0 6 0
Broccoli.....bushel	0	9 1 0	Parsnips.....doz.	0	9 1 0
Cabbage.....doz.	1	0 1 6	Peas.....quart	0	0 0 6
Calmaria.....doz	1	0 6 0	Potatoes.....bushel	3	0 4 6
Carrots.....bunch	0	6 0 0	Radishes.....do.	0	0 0 0
Cauliflower.....doz.	3	0 6 0	Radishes.....doz. bunches	1	0 1 0
Celery.....bunches	2	6 4 0	Rhubarb.....bushel	0	9 1 6
Coleworts.....each	1	0 2 6	Salsify.....bushel	1	6 0 0
Cumbers.....doz.	0	0 0 0	Savoy.....doz.	1	0 2 0
Endive.....doz.	2	0 0 0	Scorzonera.....bushel	1	0 0 0
Fennel.....bunch	0	3 0 0	Sea-kale.....basket	1	0 2 6
Garlic.....lb.	0	6 0 0	Shallots.....lb.	0	0 0 0
Herbs.....bunch	0	3 0 0	Spinach.....bushel	2	0 3 0
Horseradish.....bushel	3	0 4 0	Tomatoes.....doz.	2	0 4 0
Leeks.....bunch	0	3 0 0	Turnips.....bunch	0	8 0 4
Lettuce.....doz.	1	0 4 0	Vegetable Marrows.....doz.	0	0 0 0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	FEB. 26—MARCH 4, 1874.	Average Temperature near London.			Rain in 48 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
26	TH	Meeting of Royal Society, 8.30 P.M.	47.3	33.6	40.4	23	54 a	6	32 a	5	5	10	13
27	F	John Evelyn died, 1706.	47.7	33.5	40.6	20	51	6	31	5	11	1	12
28	S		49.1	32.8	40.9	15	49	6	26	5	24	2	20
1	SUN	2 SUNDAY IN LENT. ST. DAVID.	47.4	35.6	40.5	16	47	6	33	5	38	3	42
2	M	Meeting of Entomological Society, 7 P.M.	48.7	34.7	41.7	17	45	6	39	5	51	4	59
3	TU	Meeting of Zoological Society, 8.30 P.M.	49.9	32.2	41.0	14	49	6	41	5	2	6	12
4	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	49.7	31.5	40.6	11	41	6	43	5	11	7	24

From observations taken near London during forty-three years, the average day temperature of the week is 48.5°; and its night temperature 33.1°. The greatest heat was 70°, on the 4th, 1869; and the lowest cold 14° on the 3rd, 1862. The greatest fall of rain was 0.81 inch.

## THE SNOWDROP, AND ITS USES FOR NAKED PLACES.

**T**ome it has always appeared strange that so little attention has been paid to this the earliest of all our spring bulbs, either by those who prepare elaborate catalogues of such things, or by the gardening world in general. The charge of commonness ought not to be an excuse in an age when the Daisy and the Primrose are so much sought after, and yet the Snowdrop has the merit of flowering much earlier than the first of these, and also before the bulk of other bulbs. It has, besides, claims of its own, as differing widely from either of the plants specially named, and being of easier cultivation—in fact it is on the latter account that I now call attention to it. As in an article a year ago I noticed the purposes of arrangement to which the Snowdrop may be put, I need not repeat these here, but will at once endeavour to point out a fresh field to operate upon, and one from which it will not drive away any previous occupant.

The places which I would ornament with this lovely emblem of spring are among the least inviting of the whole area usually set apart for the dressed grounds; or even if outside of the latter it will serve the purpose as well, and the effect will be equally pleasing and agreeable. Near most country residences there are groups of large trees, or it may be a few single deciduous ones, with branches touching the ground, or nearly so, and stretching a long distance in all directions. Some single trees cover as much space as a fair-sized flower garden, affording a delightful shade and retreat in hot summer weather, but the branches are so close that only the very scantiest vegetation is met with on the ground, and this for but a very short time in spring or early summer, when a few weeds present a little greenery, which all disappears before the leaves fall. The ground is then all but naked, in fact often perfectly so, and there being no foliage on the trees the soil is everywhere seen, and the whole is of one hue. Well, it is in such places as this that I would invite the aid of the designer of pretty patterns, for here is ample scope for him, and the material to be dealt with is also simple and convenient. They present the best possible sites for embroidery, and very agreeable and interesting designs may be worked out with Snowdrops, and these when once planted will last for a number of seasons, without any trouble or attention. It is only necessary to look each returning season for the bulbs coming up in the same order as before, somewhat more thickly perhaps, but this is an advantage rather than otherwise; and when eventually (generally not for several years) it is advisable to take them up to restore the design, which may have become too crowded, the extra bulbs will be of service for planting elsewhere. There are few places without some naked unsightly space which a few patches of Snowdrops would render cheerful in midwinter, when there is so little to admire and interest the spectator.

In recommending the above mode of planting Snow-

drops to the consideration of the spring gardener, I may remark that it is only what we have done here with perfect success, and that rows of Snowdrops also line the edges of many of our walks that lead through shrubberies where it is hopeless to expect anything else. Such walks are generally edged with bricks laid diagonally so as to show a ridge-top of 45° each way, and a few inches from this edge we plant a line of Snowdrops, which in all cases have done well. Even when the ground is so hard and full of roots as to be difficult to get them planted deeply enough, they come up year after year with perfect regularity, increasing a little, of course, but not so much as in better ground. Further, I may observe that the time of planting has seldom or never been the most suitable one, for it has often been when the plants were in flower or just coming into bloom; yet so accommodating is the Snowdrop that it rarely succumbs under any bad treatment, so long as its roots are in the ground and the foliage allowed to ripen before being taken off; indeed the dead foliage in such places is seldom objected to. The Snowdrop will also succeed amongst grass in shady places, but the leaves ought not to be cut until they begin to ripen, which in most cases they might be allowed to do when surrounding shrubs. Snowdrops are here extensively planted in this way, and we find that their appearance during the latter part of January, throughout February, and early in March, more than compensates for the little roughness of the grass left as it is growing up to the middle of May; then the foliage is usually so far faded as to be cut without injury. In the case of those planted in the naked ground under deciduous trees, there need be no hurry in cutting, rather let the tops ripen and drop off.

Those having a piece of ground of the kind referred to, and a plentiful supply of bulbs, will find the labour of planting by no means heavy. The most that I have are planted in single rows, forming scrolls, curves, and other figures more or less pleasing; but it is well not to attempt too complex a design, which only confuses the whole, and that no two lines should be nearer each other than 18 inches or more. My plan is merely to scratch the design on the ground with a pointed stick, and run a thin mark of white sand along it, which on the naked ground will give the figure at once, and enable one to judge of its appearance. If approved of, it is only necessary with the spade to notch-out the ground about 2 inches deep, or a little more, lay-in the bulbs of Snowdrops 2 or 3 inches apart, or more if they are scarce, fill-in the ground again, and tread-in; the whole operation being quickly performed, and the ground very little broken. If this be done before the flowering period Snowdrops will bloom pretty well the same season, but will not multiply much till the following year. Snowdrops are easily obtained early in January, and that time seems as good as any other for planting—in fact I do not know any plant more accommodating than this in regard to growing under almost all conditions, and but rarely succumbing, excepting when treated with undue harshness during its growing period; I have seen the plants eaten-off by

rabbits, and still live, although I need hardly say that such treatment is very bad for them.

Occasionally reference has been made to the relative merits of the single and double varieties of the Snowdrop, but if I were to give an opinion it would certainly be in favour of the single one, which is earlier, more free-flowering, and increases more rapidly. In connection with the last-named property I would ask if anyone has managed to obtain bulbs of this plant from seed. Many years ago, having a quantity growing in a situation that appeared to suit them, I had the seed gathered when it appeared ripe, and sowed it at once amongst shrubs, on rough ground in plantations, orchards, &c., expecting that at least a part might vegetate; but I have not been able to trace a single plant to this half-natural sowing, and there was no lack of seed, for nearly a couple of quarts were so thrown about. I did not at the time examine the seed, which I have since thought might be imperfect, yet it had all the appearance of being well matured. The question then arises in my mind, Does the Snowdrop ripen its seeds in this country, or does it not?—J. ROBSON.

### MRS. PINCE'S BLACK MUSCAT GRAPE.

THERE is certainly something very mysterious about this Grape, and I am not surprised it has been hinted that there are two varieties under the same name. I do not at all think, however, such is the case. My opinion is that, like many other new things, its constitution was partially ruined by very rapid propagation, and that in course of time it will get all right. I believe I can see signs of improvement in it. It is certainly very desirable it should have a good constitution, for it is the best-flavoured late Grape I am acquainted with. I have this day (February 13th) tasted it in comparison with Lady Downe's and Alicante, and it is far superior in point of flavour; but I am obliged to confess I have not yet been able to grow it satisfactorily, and had almost condemned it before I saw the beautiful examples of it at Chatsworth last autumn, and then I made up my mind to try again.

It may not be known to all of your readers that a Vine when sent out new is sometimes procured early in autumn by the trade, planted and forced into a most unnatural growth in the same season, and from this second growth (which has to be matured as far as it is possible to mature it in the late autumn and early winter months by strong fire heat) hundreds of plants are raised and distributed over the country. It is reasonable to suppose that plants so raised cannot have such a constitution as those raised in a more natural manner, although they may be vigorous and healthy to look at, and no eye can detect the difference. Then, again, see the crowded way in which young Vines are grown in most nurseries, they cannot possibly be all ripened; and remember that unripe eyes will grow as fast as ripe ones. Those not even brown will grow, and make healthy plants to look at, but they cannot be so in reality.

If my theory is right as regards Mrs. Pince, may it not be the same with other new Grapes which have been perhaps too hastily condemned? and some of which were sent out by men who know all that is at present known about Grapes and Grape culture, and whose honour is above the slightest suspicion, yet whose much-landed productions are at the present time pronounced by the public to be worthless.

It is said that everyone thinks his own geese are swans, but that only holds good of enthusiastic beginners. Practice and daily disappointments such as the most successful gardener always meets with make him able to compare impartially his own productions with those of other people, and I cannot believe but that some of the new things were better before they were grown at express speed for distribution than they have proved to be since that time, or their own raisers would never have allowed them to be distributed.—WILLIAM TAYLOR.

### DIG-UP POTATOES BEFORE RIPE.

I AM glad the inquiry concerning the rubbing off the skin of young Potatoes has been made, as I have inadvertently omitted any mention of it in the papers on this subject. When the Potatoes cease to swell the skin begins to harden or ripen; then, as I have before stated, the crop of such kinds as Victoria may be lifted with perfect success. Never mind about rubbing off portions of the skin, the economy of the tuber will repair all that, and what is of more importance, the quality of the Potato will sustain no harm. I have now about a dozen sacks of Victorias that are as excellent in appearance as they

are in quality, which, when they were taken up on the 14th of last August, were so tender that the skins were very much torn. So also were some Flukes, Regents, and other sorts, and yet all have been good after their kind. I can speak with confidence about this important matter, for I have practised early-lifting most successfully for several years; and had "D., Deal," taken up his Potatoes as he first intended he would not have had to revert to baked Potatoes, as he appears to have done; for, after all, it is the Potato that boils well that is most valuable.

When the early lifting—which I hope to see more generally followed—is practised, it will not answer to throw the tubers in a heap, and then leave them alone. On the contrary, most careful tending in the storehouse is necessary. It will, perhaps, be best to describe the entire process of lifting and storage. On a bright sunny morning the diggers, each with a four-tined steel fork, begin lifting at 6 A.M.; but the collecting does not begin till four hours later, which gives the diggers a good start, so that by the time the Potatoes are put into the sacks the skins are tolerably dry. In taking them to the storehouse due care is to be exercised to handle them as gently as possible. They are spread in layers of about a foot thick, and slightly covered with straw, every window being kept open day and night. Once a-week each layer is examined closely for blighted or rotten tubers. The ripening process still goes on, and when the Potatoes are fully matured—that is to say, when the skin will not rub, they may be stored in much closer compass for the winter.—EDWARD LUCKHURST.

### ROYAL HORTICULTURAL SOCIETY'S COUNTRY SHOWS.

As we were going to press we received from the Secretary of the Royal Horticultural Society copies of a correspondence which has taken place on the presentation of a memorial to the Council regarding the holding of a country show this year, and we have only space for his reply, which will indicate the nature of the correspondence.

"Royal Horticultural Society, South Kensington, S.W.  
"25th February, 1874.

"Messrs. James Veitch & Sons, King's Road, Chelsea, S.W.  
"GENTLEMEN,—In reply to your letter of the 20th inst., the Council, far from having any desire to put a stop to provincial shows, are, on the contrary, most anxious to promote and encourage them.

"Until very recently they were in negotiation with the authorities of an important town on the coast, and of one in Scotland, with a view to holding shows, but without being able to come to any satisfactory arrangement.

"The Council will be most happy to receive proposals or suggestions for a show during the ensuing summer, and will give such proposals their earliest and best consideration.

"I have the honour to be, gentlemen, your obedient servant,  
(Signed) "W. A. LINDSAY, Secretary."

### LEE'S VICTORIA REGINA VIOLET.

MANY inquiries have arisen about my obtaining the Victoria Regina Violet, and in reply I disclaim all merit or skill in its production. The flower was naturally fertilised by the bee or some other insect; the seed was carried by a mouse and deposited, at least 15 yards from where it grew, in a Strawberry bed, and was discovered by me in December, 1871, having grown there a year or more previously. The Victoria Regina could at that time be covered with a dinner plate, and the other plant (Prince Consort), about 15 inches distant, was still smaller. There was, I think, one fully expanded bloom on Prince Consort; others had been, but were past.

Strawberries and weeds were carefully cleared away, a little good soil placed round the plants, and each protected by a hand-light. As the flowers came up they were carefully fertilised; each pod was attentively watched, gathered when matured, and, as I thought, carefully stored. The seeds were sown in the autumn, but not one vegetated.

The following statement gives the order of the origin and progress of the plant:—

Summer of 1870.—Seed sown by a mouse.

Spring of 1871.—Plants probably appeared.

Summer of 1871.—Plants produced summer flowers.

December, 1871.—Plants discovered as narrated above.

Spring of 1872.—Thirty plants sprung-up around the parent plant from flowers of the previous summer.

The summer flowers of 1872 were taken up no notice of, or perhaps some hundreds of seeds might have been secured. A few pods were taken from the young plants (these also from summer flowers), and the seed at once sown in a pan; they

produced about sixty plants. But what is remarkable in each case is that the seedlings are so different from each other; indeed many of them are so unlike the parents as to render it quite a matter of dispute whether they could possibly be their progeny.

My earnest hope is to obtain great improvements by carefully selecting seed. What I am most anxious for is to get colour, compact and upright growth, fine foliage, and scent as well as size fit for conservatory decoration.

For example, I have one seedling with the lower petal or lip black, but the petals are very narrow although long, only  $1\frac{1}{2}$  or 2 lines wide, yet I was pleased with it as a parent; and to my great delight some two or three weeks after I had another, although not so dark, yet of good shape and compact growth, properties which the other did not possess. Another seedling I have, although small (not larger than *Devoniensis*), is quite as dark, of upright growth, and as free a bloomer as the old Russiau, producing at one time thirty or forty fully expanded flowers on a very small plant. This would also be an addition to our conservatory decorative plants.

How beautiful a plant is The Czar or Giant when well grown, even apart from its flowers. I have two of that habit of growth, with very deep green leaves, quite distinct as to the darkness of the foliage, and having large deep blue flowers of good shape. They are likely to be useful as parents, at least I have every hope they will prove so. Prince Consort also is of very handsome growth, darker green in leaf than The Czar, and of fine upright growth. This I intended sending out at the close of this year; but the demand for gathered flowers is so great that, instead of doing so, I purpose planting them as well as large numbers of Victoria Regina.

I gather from my present experience that there will be a great demand for these flowers in the large cities and towns of the United Kingdom. They have only to be known to be appreciated. Even the working classes give them the preference at an advanced price.—G. LEE.

#### HEATING—FUEL.—No. 4.

THE first requisite in a heating apparatus is power, the second efficiency, and the third economy. Power and efficiency are in a great measure dependant upon the boiler, but all three are to a large extent affected by the mode in which the heat obtained is applied. We communicate heat to a great volume of water, and only permit it to be radiated in the structure to be heated from a small extent of surface.

Now, a structure heated by hot water is warmed in proportion to the extent and heat of the pipe surface exposed within it. Pipes heating beds, only give heat indirectly to the house, consequently pipes used for bottom heat are not to be taken into account when calculating the amount of piping required to heat any structure to a given temperature. It is usual to follow Tredgold in calculating the extent of piping required. His rule is "Multiply the cubic feet of air to be heated by the number of degrees the house is to be warmed, and the result divided by twice the difference between the temperature of the house and that of the surface of the pipes will be the feet of piping required." In using this formula we must bear in mind that the temperature of the surface of the pipes at their maximum may be  $200^{\circ}$  or even boiling ( $212^{\circ}$ ), but as a rule are rarely over  $180^{\circ}$ , which we will adopt as the maximum temperature of hot-water pipes. Let us apply this to a stove under my care, 30 feet by 24 feet, and containing 5280 cubic feet of air. The maximum from fire heat is  $65^{\circ}$ , the temperature of the air being  $20^{\circ}$ , which is  $45^{\circ}$  of difference. From the 5280 we must deduct 500 cubic feet for a bed which occupies the centre of the house, and we have 4780 cubic feet of air to be heated by artificial means  $45^{\circ}$ . This, according to Tredgold's rule,

would therefore be  $\frac{4780 \times 45}{180 - 65 \times 2} = \frac{215100}{230} = 935$  feet of pipe surface at  $180^{\circ}$ , which is more by 300 feet of piping than required in actual practice. 600 feet of surface at  $180^{\circ}$  are sufficient to maintain the maximum of  $65^{\circ}$ , the external air being at  $20^{\circ}$ .

Tredgold, however, affords us data for ascertaining what he terms the cubic feet of air. "To the length of the stove in feet, multiplied by half the greatest vertical height in feet, add  $1\frac{1}{2}$  time the whole area of glass, and also eleven times the number of doors [in feet]; the sum will be the number of cubic feet to be heated from the temperature of the external air to that of the stove." In the case of the stove, 30 feet multiplied by 8 (half the vertical height) = 240; this added to  $1\frac{1}{2}$  time the whole area of glass = 1734, and eleven times the doors (four) or 880,

will give a sum of 2854 as the cubic feet. Therefore, as per rule above,  $\frac{2854 \times 45}{180 - 65 \times 2} = \frac{128430}{230} = 558$  feet of pipe surface, equivalent to six rows of 4-inch piping all round the house excepting the two doorways.

The latter method of calculating the piping required to maintain any temperature desired is very nearly accurate and accords well with practice, but unless Tredgold's method of ascertaining the cubic feet to be heated be adopted the calculations are almost twice too high.

By Hood's method we also obtain an equally erroneous number of feet of surface. Hood's rule is, "Multiply 125 by the difference between the temperature at which the room (or structure) is proposed to be kept, when at its maximum, and the temperature of the external air, and divide this product by the difference between the temperature of the pipes and the proposed temperature of the room; then the quotient thus obtained, when multiplied by the number of cubic feet of air to be warmed per minute, and this product divided by 222, will give the number of feet in length of pipe 4 inches diameter, which will produce the desired effect." This rule applied to the stove would be:— $45^{\circ}$ , the difference between the temperature at which the house is to be kept and that of the external air, multiplied by  $125 = 5625$ , which divided by the difference ( $115^{\circ}$ ) between the temperature of the pipes ( $180^{\circ}$ ) and the proposed temperature ( $65^{\circ}$ ), will give 48. This multiplied by the number of cubic feet of air to be warmed per minute ( $4780 = 229,440$ ), which, divided by 222, will give us the number of feet of 4-inch piping required = 1033, or nearly double what actual practice demands. The rule is applied to raise the temperature from  $20^{\circ}$  to  $65^{\circ}$ , which I am convinced is not the proper minimum to calculate from as that of the external air. It would be much better to reckon the external air at  $32^{\circ}$ , and the temperature of the surface of the pipes  $180^{\circ}$ , which ought never to be exceeded in plant houses, except in very severe periods, and the figures would then stand as under:— $125 \times 33 = 4125 \div 115 = 35 \times 4780 = 167,300 \div 222 = 753$  feet of 4-inch piping, which is fully 153 feet more than in practice is required.

We should, however, bear in mind that Hood calculates the temperature of the pipes to be  $200^{\circ}$ , or  $12^{\circ}$  less than the boiling point of water, which is very much too high a degree for the pipes in horticultural structures to be heated for any considerable time; in fact, life-long practice as a gardener convinces me that the lower the temperature of the heating surface the more congenial is the heat to the growth of plants. Instead of heating pipes to a temperature of  $200^{\circ}$ , or even  $180^{\circ}$ , I am satisfied the pipe surface should seldom exceed in temperature twice that required to be given any structure to be warmed. This would entail a larger heating surface than would be needed were the heat radiated at a higher temperature; as, for instance, for the stove aforementioned we at  $180^{\circ}$  require 753 feet to give a temperature of  $65^{\circ}$ , calculating the external air at  $32^{\circ}$ ; but if the temperature of the pipes were  $200^{\circ}$ , according to Hood we have  $125 \times 33 = 4125 \div 135 = 30 \times 4780 = 143,400 \div 222 = 645$  feet of piping required. Even this in severe weather is an excess of piping, so that by adopting Hood's rule for determining the feet of piping required we need not heat the pipes so highly as were the rule of Tredgold adopted.

Although it is desirable to have a large rather than a small amount of heated surface, the cost of the one is very much greater than that of the other. Some, though aware that a small extent of piping radiating heat at a high temperature is not so good for healthy vegetable growth as a larger surface at a lower temperature, are, nevertheless, from pecuniary considerations, desirous of employing no more piping than is absolutely necessary, the pipes being heated to the maximum of  $200^{\circ}$ . The minimum amount of piping would seem to be secured when we take as the temperature of the external air that of the mean temperature of the coldest half of the year or winter months, which in this country is  $40^{\circ}$ .

I have a greenhouse which is 26 feet square, and by Hood's rule, the external temperature being considered  $40^{\circ}$ , and the house to be kept at a maximum of  $50^{\circ}$  from fire heat, we have  $125 \times 10 = 1250 \div 150 = 8 \times 5108 = 43264 \div 222 = 190$  feet of surface at a temperature of  $200^{\circ}$ , the actual piping employed being 182 feet of 4-inch, or two pipes, a flow and return on a level all round, except doorways. This amount of piping, though sufficient to keep out frost, is not to be advised, as the heat is given out at so high a temperature as to dry the atmosphere too much in the immediate vicinity of the pipes. The temperature of the external air may, for this country, be cal-

culated at 40°, the mean of its winter months (and in all countries it would be safe to take the mean of the coldest months of the year as that of the external air); but for the successful cultivation of plants and fruits it is not good policy to attempt such cheeseparing, and I therefore advise for this country the external air to be reckoned at 32°, and determine the feet of heating surface at 200° by Hood's rule, for the piping found by it, though entailing a somewhat greater first cost, would be infinitely better for the plants (the surface seldom needing to be heated over 160° to give the required temperature within the structure), and the saving effected in fuel afterwards would more than balance any claim for interest on extra first cost or outlay in pipes.—G. ABBEY.

### THE ROSE GRUB.

A FRIEND has written for information, asking a question that must occur to many, so I have thought it best to answer it through the pages of the Journal. It is this—speaking of budding Roses—"How about buds that show a hole through them, after separation from the wood—should they be used?" Most certainly not, even if it is the only bud of the sort you have. Throw it away, it will not grow. The hole is caused by "the worm i' the bud." The larva of a little lepidopterous insect belonging to the Tortricidæ, a Spilonata—probably *roboreana*, *tripunctana*, or *rosæcolana*—vulgarly the grub of a little moth called the Long Cloak. I do not quite know whether its metamorphosis is thoroughly known, but certain it is the ova or egg is laid in May, June, and July on the tip of the bud, and the larva hatching, bores down into it, eating its way through. Some of the larvæ feed on rapidly, and successfully pass from larva to pupa, and from pupa to imago, or the perfect moth state, the same summer, while others hibernate—perhaps from the eggs of the late-hatched moths, but this I am not certain about. The hand of God is too great in His work for me to say what is in the provisions of Nature! it is enough for me to hear with my ears, and to see with my eyes; but to say the larvæ that hibernate are only from the late-hatched imagos, or a second brood, is too much for my poor philosophy. I know not His manifold ways.

"I know not what I am, but only know  
I have had visions tongue may never speak."

But I am wandering—am losing myself in the love I feel for His works.

"As I feel and wonder, listen,  
Listen in a dream."

For all the time the grub in question may be another species' and even genus, than the above-mentioned, as I find the perfect form of another Rose-feeder, *Anthithesia ochroleucana*, is by no means rare in my garden, and the larva state of which, I believe, has not yet been described.

Well, I was going to say some of these larvæ (grubs) hatch in June and July, bore through the heart of the bud down into the pith of the wood, and there hibernate through the winter, ready to commence operations in the spring, and to eat out the heart of shoot after shoot, much to the annoyance and disgust of the Rose lover and grower.

It often happens, after cutting a bud and separating the shield from the wood, that a small pin-hole is to be seen clean through the bud nicely but thinly lined with a silken web, and on inspecting the shoot from which the bud was cut you will, perhaps, find you have cut through a very small brown larva with a bright black head; if not, cut further and deeper into the wood, so long as you can follow up the hole, and then you will find the little wretch (Rose-grower now) snugly ensconced. I always give them a dig with the point of my budding-knife. Rose-grower still, although lover of nature; but somehow my love for the Rose is too great for my love of nature generally, and I find I cannot keep to the good old "live and let live" in this case.—W. FARREN.

### THE PATENT GLASS-CUTTER.

TAKING advantage of the many valuable hints that appear from time to time in this Journal, I have built a small greenhouse, 14 feet by 9 feet, span-roofed, and being only a labouring man have had to do the whole of the brick-setting, joinery, painting, and glazing myself, and under the peculiar circumstances in which I obtained the glass it was necessary that the whole of it should be cut 8 inches by 6 inches. To purchase a diamond would have been a serious financial consideration,

my means being somewhat crippled by my already large expenditure; but on receiving my copy of the Journal my heart leapt when I read your paragraph on Messrs. Dick Radclyffe's Patent Glass-cutter. I took advantage of what I considered my good fortune and wrote for one, and obtained it immediately. It served my purpose beyond my expectations, but, in consequence of the great amount of work it had to do, it confirmed your misgivings about its durability, and became dull and required resetting; and confiding in your statement, "that you understood it could be reset for 6d.," I returned it to Messrs. Radclyffe with the required number of stamps. It was returned with a note that "it is so cheap that resetting is out of the question."

I should not have troubled you had it not been, that, feeling satisfied there was some misunderstanding somewhere, I thought it advisable to inform you of the circumstance. I do not wish to find fault with the useful little instrument, because for ordinary purposes it is a marvel of cheapness.—T. NORTON, Leeds.

[When we said the cutter can be "made equal to new for 6d." we quoted from Messrs. Radclyffe's communication.—Ens.]

### THE KITCHEN GARDEN.—No. 6.

I now come to the formation of the garden, and wish first to direct attention to the importance of securing a proper starting point, so that the course of the walls will be true to the different aspects required.

Now, whatever shape a garden is intended to take, we should first find out the direction of the four cardinal points, and mark their positions, so that they may be easily referred to if needed in any subsequent operations. Generally there are surrounding objects indicating with sufficient exactness one or

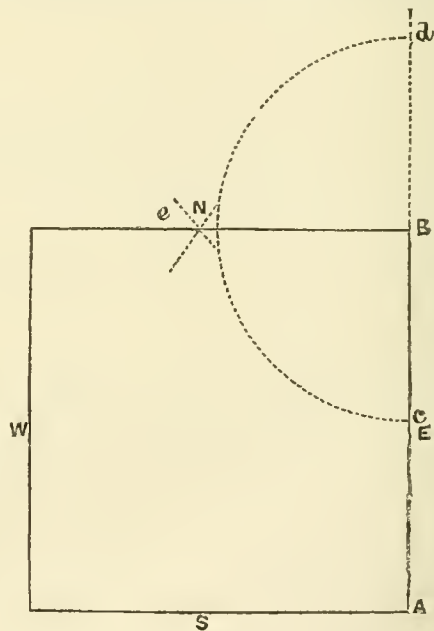


Fig. 1.

more of the points sought, and from which a line may be traced out to serve as a starting point, but in the absence of any such guide the next method, and perhaps the most reliable one, is to first find out the meridian line. This may be done by fixing a long straight pole or stake quite perpendicular in the ground, as near as possible to the spot about to be enclosed. At midday this pole will throw a shadow, whose length will be in fair proportion to the height of the pole. This line will of course point towards the north, and at the extremity of it another mark should be fixed, which will give the direction of the wall that is to run from south to north. Or, presuming that the garden is to be in the form of a square or any other regular-sided figure, and that the operator is standing on the right-hand side, this line would indicate the course of the east wall; and it may be extended to the length required if

the ground is tolerably level, so that a sight can be obtained by placing stakes at regular distances in a line with those first fixed. In doing this there ought to be two persons engaged, one to place the poles while the other takes the sight from the first two poles put down. After fixing upon the length of this wall the next thing is to strike out the line for the wall that is to run from east to west, or the north wall, which ought to proceed at right angles to it. In order to make sure of this, instead of trusting to the eye alone, it will be found by working out a simple problem in practical geometry.

The accompanying figure (fig. 1) will give the method. The line *AB* is 2 inches long, and for the purpose in view we will say that it represents 20 feet, or the wall running from south to north as above described. Extend the line 1 inch, or 10 feet beyond *B*, and take that length as a radius, and describe an arc touching at points *c* and *d*. The width from *c* to *d* is equal to one side of the figure. Now take three parts, or 15 feet of this width, and from points *c* and *d* describe the arcs at *e*, then draw a line from *B* through the intersection at *e*, and it will give you the direction the north wall ought to take to be at right angles with *AB*. Proceed in the same manner to find the course of the other walls, and the square will be completed.

The above describes the formation of fig. 1 in my article No. 5 (page 121); for figs. 2 and 4, which are oblong instead

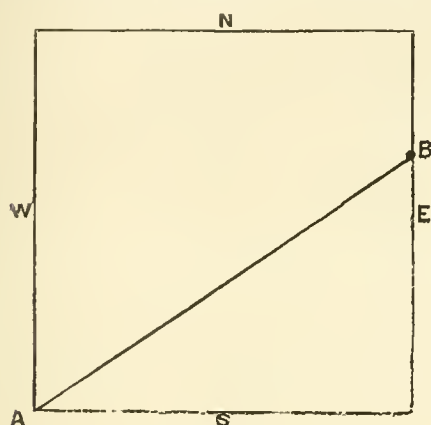


Fig. 2.

of square and the walls proceeding at right angles to each other, the same rule may be adopted, the only difference being that in the former the north and south walls must be extended to the desired length towards the west, and in the latter the east and west walls towards the south.

Fig. 3 (page 121) shows some difference from the others as its shape indicates, but only in the position of the south wall. Now, as before stated, by adopting this shape it is intended that there should be no part of the garden within the walls on which the sun could not shine at some time on a clear day during the summer months, therefore it is necessary to be particular that this object is secured by giving the wall its proper position. Assuming that the other walls in this garden are placed east, west, and north, and that the west wall is 60 feet long, the east wall ought only to be one-third the length of that, or 20 feet; then if the south wall starts at the extremity of the west wall and joins the east wall at *B*, that will give the direction required. Fig. 2 will illustrate my meaning, and it will be seen that the length of the wall *AB* is considerably greater than if on the square, which will be considered an advantage by some.—THOMAS RECORR.

### ROYAL HORTICULTURAL SOCIETY.

A rumour having got abroad that a number of the Fellows of the Royal Horticultural Society had formed themselves into a body to institute a suit in Chancery against the present Council, we have received the following communication from good authority intimating what the real proceedings are. It is certainly very desirable for all parties that any doubt as to the responsibility of the late and present Councils should be set at rest.

"Allow me to inform your readers that the measure now contemplated by some Fellows of the Royal Horticultural

Society for the purpose of deciding the legality question is not a suit in Chancery, but a very different and more simple proceeding. The Lord Chancellor has a peculiar and especial jurisdiction in such cases, and it is to him that the appeal will be made. The situation has now become an intolerable one, and the gentlemen alluded to have determined that the question shall be settled one way or the other.—R. T. C."

I AM not going to inflict another long letter upon you, but must beg for a small space to answer objections raised to the guinea subscription plan. At the Wednesday meeting I was placed near four good specimens of their respective branches of the profession, two being well-known nurserymen and two first-class gardeners; one of the former suggested that I was trusting too much to gardener subscribers. As one of the gardeners spoke out well for his class, I left them to settle the matter between them, but afterwards had the objection raised more fully. I will now answer it.

I never contemplated the social position of the Society being lowered, or that the renovated Society should consist in a very large part of gardeners, though I believe that a considerable accession of these mere working bees would greatly strengthen it. A head gardener, to keep his situation in a large place, must be a superior man, and it is only the best of these (such as those who work so actively on our Committees), who would take enough interest in general horticulture to make them afford the guinea annual subscription. In very many cases their influence would make their employers join the Society. Judging from the letters that come to me, the idea of the guinea Fellowship has been most warmly taken up by people in as high social station as that of the present Fellows, and they talk of influencing their friends, presumably of the same class, to join with them.

I see the acting Council has published *in extenso* in one of your contemporaries the Society's accounts for the past year. Let anyone look through these, bearing in mind that much of the cost of Chiswick goes for furnishing South Kensington, and judge for himself whether a Society with the guinea subscription of 5000 Fellows would not have far greater working power than the Society in its present state has with the much larger income, of which the lion's share goes to keep up a square for the Kensingtonians.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath.*

I AM sure it would be very satisfactory indeed to be informed whether there is to be a grand provincial Show of the Royal Horticultural Society this year or not. Yes or no, one way or the other. If the former, why we can all wait for the schedule; and if the latter, there would be an end of the matter. It ought to be settled one way or the other. Even supposing a show to be decided upon, it will occupy a very considerable time before the schedule can be in the hands of exhibitors, and it would be both a mistake and a hardship to spring a schedule upon them at the eleventh hour, when in many cases proper preparation would be impossible.—T. M. SHUTTLEWORTH, F.R.H.S.

### NEW BOOK.

*The Potato Disease and its Prevention.* By C. DIMMICK, Nurseryman, Ryde, Isle of Wight. London: Houlston and Sons.

WE have received several pamphlets on the same subject, but not one characterised by the good sense of Mr. Dimmick's. We will give a few extracts, and recommend the entire pamphlet to our readers.

"After long and careful investigation I came to the following conclusions:—

"1st. That the Potato being a native of a dry, warm, sunny country, it requires extraordinary care to preserve it in a state of health in more northerly regions.

"2nd. That it is a disease and not a blight.

"3rd. That the constant rubbing-off of the shoots of the seed tubers, which had been practised year after year, had so diminished the vital energies of the Potato, that its constitution has become weakened and debilitated thereby, and rendered increasingly susceptible. And that the constant ill-treatment and high cultivation it has been subjected to, combined with the sudden changes of our variable climate, have brought it into a state of disease.

"It is reasonable to conclude that the laws of Nature may be interfered with in a vegetable as well as in an animal, and in my experience I have found how remarkably Nature's laws have

been violated with regard to the Potato. If an animal is taken from a warm climate to a cold one, extra care is required to preserve it in health. This is a fact which all keepers of zoological collections can corroborate, and the greatest care is taken in their institutions to keep each animal in the fullest vigour, so that they may not suffer from the change of climate and other foreign circumstances by which they are surrounded, and of all animals the natives of tropical countries would be the most likely to fall into a state of disease if these precautions were neglected."

"Depend upon it, one great cause of the disease is that we have not sufficiently studied the native country of the Potato and adapted our treatment to it accordingly."

"I remark further, that it is a disease and not a blight, and that feebleness of constitution in the Potato is the great predisposing cause of the disease."

"The same causes always producing the same effects. In all cases when the disease sets in just as the plant is making an effort to perfect its tubers it is more violent than when the tubers are in a more advanced state; this is the reason why early Potatoes ripening in July are not so liable to an attack of the disease as are later crops. In the first place, early kinds have always been more carefully treated; and secondly, they are scarcely ever subject to the same exciting causes, arising from sudden changes during their growing season."

"I come now to the principal cause of the disease—viz., the constant rubbing-off of the shoots of the seed tubers, which operation being repeated year after year has so diminished its vital energies, that the constitution of the Potato has become weakened and debilitated, and thereby rendered increasingly susceptible of disease. And the constant ill-treatment and high cultivation it has been subject to, combined with the sudden changes of our variable climate, have brought it into a state of disease."

"As a grower, I well remember how this process has been conducted, generally once before Christmas and twice or thrice afterwards, and on each occasion shoots in large quantities have been taken away. I once said to one of my men as he was taking away a large basket full of these shoots to the muck heap, 'Don't you think it will greatly exhaust the Potato to be continually taking away these shoots?' He replied, 'No doubt of that; and, besides, you won't have so many Potatoes in measure by nearly one-third at planting time as when they were first stored away.' I found this to be perfectly correct, for when planting time came the tubers were reduced to about half their original weight; they had lost their solidity, and handled like pieces of sponge, consequently their life, and health, and vigour must have been greatly reduced."

"The next consideration is the storing of the tubers for seed, a matter of the most vital importance, because the first shoots must positively be preserved. I lay more stress upon this than upon anything else, because it is of more importance than all other things together, for if you put your seed Potatoes away in masses and encourage them to grow out, and repeatedly take away the shoots, you take away that power which would enable them to resist the disease in the future. The seed tubers, therefore, should be stored as soon as they are dug up. Dry warm days should be chosen for this work, for if they are taken up wet they can never be dried so well afterwards, and if you can let them remain in the sun for a few days after they are taken up so much better; but never mind about greening them before they are stored, they will green fast enough afterwards if properly stored. In all cases handle them very carefully, even as you would your choice Apples and Pears; always set the most careful man you have to select your seed Potatoes if you cannot possibly do it yourself."

"The time of planting will vary a little, and will depend also upon the weather and the state of the soil. March is the proper time, and it is a very good rule to begin at the beginning and finish at the end of the month; but if the weather is open, and the soil in a fit state, planting may be begun in February, especially where there are large quantities to be planted; but should it be a backward, wet season, and the land in an unfit condition, it will be much better to wait, even though it may become necessary to put on extra strength to get them in quickly, for there is generally dry weather in March. In all cases planting should be finished by the middle of April. There will be no great difference between their times of coming out of the ground, for even those planted in April will be up quite as soon as it will be safe, for we often get hard frosts the first or second week in May."

**CROQUET GROUND.**—In your Journal of February 5th you say, "60 yards by 20 yards is a good proportion." Sixty yards would be too long, and 20 yards too narrow. A full-sized croquet ground is 40 yards by 30 yards. All the grounds at Wimbledon are set out of this size.—G. A.

[The croquet ground 60 yards by 20 yards is used for two

sets. We are aware that the full size for one set is as stated by our correspondent.—Eds.]

### NOTES BY THE WAY.—No. 3.

THE town of Mentone, or Menton as it is now called, since its annexation for the second time to France, is a small place with a resident population of little over six thousand, but in the season, which extends from the middle of November till the end of April, it is increased by between two and three thousand. It is situated in one of those lovely crescent-shaped bays in the Gulf of Genoa, of which Capo S. Martino and Bordighera respectively form the horns, and Mentone is in the centre of the crescent. No breath of rude winter wind ever comes near it, and there it lies in the month of January basking in a brilliant sun, and the blue Mediterranean in front reflecting the rays like a Titanic mirror. But for all that Mentone has its troubles, and those who come here expecting to be rid of theirs are too frequently disappointed. It is said that "every Rose has its thorn," and health-seekers will find that even here they cannot indulge in acts of indiscretion any more than they can elsewhere. Though the climate is so fine it is very treacherous. The mornings and evenings are cool while the days are sometimes insufferably hot; and when the wind blows from the sea, even on these hot days when invalids are tempted to sit and lounge about, they almost invariably catch colds which are sometimes of a very serious character.

The vegetation with which we are everywhere surrounded has all the character of a subtropical region. The Date Palm (*Phoenix dactylifera*), of which there are some magnificent specimens in the gardens, here seems to luxuriate; but though it blooms and fruits freely, there is not sufficient heat to mature the fruit. Agaves abound, both the green and the golden-striped variety, these being planted in rows along the promenade and in all gardens. At Villa Medecin, the residence of the Mayor, I measured the leaves of a striped one, which were 6 feet 6 inches long, and this was not the case with one plant only, but with many. I thought how some of our exhibitors at home would long to have a pair of such for a collection of twelve greenhouse plants. Here there are no greenhouses, and the Agave is a hardy plant, growing on hill-sides by the roads and railways. Among the other plants grown in the gardens and shrubberies are *Sparmannia africana*, Australian *Acacias*, and *Mimosas* of several species, and towering above everything may be seen in every garden *Eucalyptus globulus*, in some cases 50 feet high. *Salvia fulgens*, *Cineraria maritima*, *Veronica Andersoni*, and *Fabiana imbricata* assume the form of bushy shrubs, while there are Roses now covered with bloom, conspicuous among them *Maréchal Niel* and *Gloire de Dijon*. *Datura arborea* and the red variety of *Castor Oil plant* (*Ricinus communis sanguineus*) are quite trees, now blooming abundantly. *Eriobotrya japonica*, *Justicia arborea*, *Abutilon striatum*, *Habrothamnus elegans* are also large trees or shrubs now in bloom. The Prickly Pear (*Opuntia*) is seen in great masses everywhere; and one of the most elegant and most abundantly-grown trees of any is *Schinus Molle*, a very elegant and graceful tree, with its pendant pinnate leaves and its clusters of coral red berries. When bruised the leaves have a strong balsamic odour, and emit a milky juice which is quite resinous. This tree is very properly planted everywhere. At Nice there are rows of them on the Quai Massena, in the public gardens, and, indeed, wherever trees are planted. *Pittosporum Tobira* is also another favourite tree, attaining the size and producing much the same effect that Portugal Laurels do in England. The *Oleander* is very abundant, but not yet in bloom. There is a pretty plant which produces a fine effect here at present, and which at first sight looks like *Tropæolum canariense*, as it rambles over screens, hoppers, and buildings; it is *Senecio mikaniæformis*. I never see it in England anywhere. I should think it would make a good conservatory climber, and it blooms all the winter. It is much grown in pots and suspended from *corbeilles* in Belgium, from which it depends in "Creeping Jenny" fashion.

Gardening in the south of Europe is not practised—at least what we in England call gardening. Everything here grows of itself, and neither gets nor needs tending. Trees are pruned when they need pruning, and weeds are kept down when they grow; but the climate is so hot in summer that neither weeds nor garden flowers can grow. To garden here means incessant watering, and water is scarce except during the rainy season and when occasional showers come. Kitchen-garden crops

are good, and the markets are bountifully supplied. Already, in January, early Peas are coming in. The gardens in the suburbs have all rows of Peas now 4 feet high in full bloom and some pods showing. Broccoli is very abundant.

The great cultures here are Oranges, Lemons, Olives, and Grapes. Of the Oranges I cannot speak in very high terms, for although they look by appearance to be ripe, they really will not be so till April or May. In some instances I have observed the crop being gathered now, doubtless for exportation, as the fruit will now bear carriage better than it will when fully ripe. I doubt much if they ever attain the high perfection we find in the St. Michael's and Maltese Oranges imported into England. The greatest height above the sea where I have found the Orange growing is 640 feet on the terraced gardens on the mountains. The Orange is not so extensively cultivated as the Lemon, although the tree withstands a greater amount of cold, and is hardier, the reason being that the Lemons cultivated about Mentone are said to be the finest to be had in commerce. The annual produce is said to be thirty millions of fruit. Every day at this season the women may be seen bringing in great baskets full of fine large fruit from the gardens to the merchants' stores, all of which are carried on the head—such weights as almost terrify one to think how these people can bear them for such distances as they travel. I am told that some of them come from two or three miles with a load which cannot be less than a hundredweight. They remind me of the Strawberry women who used some years ago to carry the finest Strawberries from distances about Isleworth, Twickenham, Mortlake, and Deptford to Covent Garden Market. This practice seems abandoned now, and the fruit is carried in carts made expressly for the purpose. Some contrivance might be devised here to liberate the women from such unwomanly drudgery, and one instinctively asks why it cannot be done by mules, which perform every other carrying work that is needful between the town and the mountains. I am told the Lemon blooms all the year, and that it produces four successional crops. There are places here where essences are extracted in large quantities from the Orange and Lemon peels, and this forms one of the important commercial products of the place. One of the largest of these is conducted by the Mayor, M. Medecin, and the large merchant of the town in the finest Lemons has his magazine in front of the window where I now write.

The Olive tree grows here in great luxuriance, and attains an enormous size and great age. I measured one near the Borigo valley, a very old tree, which 2 feet from the ground was 18 feet in circumference. The trunk was very deeply furrowed, and the tree itself, which is now becoming rather bare and "stag-headed," resembles in its old age one of our old trees of *Salix alba*. The Olive may be said to be the tree of the country. Wherever you see a shade of sombre green be assured it is an Olive. In ascending the mountains I found it cultivated to the height of between 1300 and 1400 feet, and then it ceased to give place to Chestnuts, Walnuts, and Figs. The Olive seems to be a tree of great vitality, for however old it may be, and however denuded its branches are, there is always a crop of strong suckers emitted round the trunk and from the roots. Some of the trees I have seen must be many centuries old, and from them we can gather how long these terraced gardens in this country, which reach even to the top of the highest hills, have been made; for on the way to S. Agnese, 1300 feet above the sea, I saw some patriarchal trees, now going to decay, occupying their original place on the top of the retaining wall of the terrace.—R., Mentone.

## THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 16.

In a locality which shall be nameless here an individual resides who is not by any means a bad amateur gardener, and who cultivates the study of zoology as well as horticulture. The former he has managed to turn to a practical purpose in his garden, and sundry four-legged creatures roam there upon which many persons look with suspicion, and perhaps disgust. You walk up to one of the sheltered walls to examine his fruit trees, and on the ground, snugly ensconced in an angle of the wall, and reposing there after he has been banqueting upon a host of snails, a huge toad leers up at you. As you sit in his summer-house you hear a strange rustling under the seat, and presently from a corner out walks a hedgehog, introduced to the domain on account of its appetite for insects, especially beetles. Birds of various species, some of

which are, at least occasionally, guilty of teneching in a garden what they should leave alone, though they usually prey upon insects, are freely tolerated or even encouraged. Most astonishing of all, and provocative of screams on the part of lady visitors, in one plot of ground which is entirely shut-in our friend allows several blindworms to range about and feast on slugs and snails, or insects should they so incline. I have no doubt that Mr. Wood is right in asserting that this harmless and sadly abused lizard is really as good a friend to a garden or field as is the thrush, only from the way in which it works nobody observes how much service it renders us. But I was going to add that our worthy friend with all his acuteness is not awake to the value of insect helps in enabling us to keep some troublesome species in check. For instance, if I were to propose to him the introduction into his garden of a colony of burying beetles he would probably shake his head, though he knows something about the habits of these insects, and argue that though they might do a little good by interring certain objects which are better laid under the mould, they would probably also make free with the roots and tubers of plants; also he might, perhaps, urge that the burying beetles, unlike intelligent bipeds, will exercise no judgment in their work. If they found a dead bird it is all but certain they would dig its grave on the spot, whereas the gardener might think that it would prove a desirable fertiliser in a different place. A strong prejudice which we most of us imbibed at early childhood, and which leads us to be suspicious of the insect races generally, helps to limit the encouragement given to useful species.

Many, more particularly those which may be called "darkling insects," because their labours are carried on at night, or beneath the surface of the earth or some other substance, do us benefit and we know nothing about it; they come into the horticulturist's territory unasked, and it must be admitted they do not destroy noxious species out of pure kindness, but for their own benefit. The burying beetles and some of kindred habit, may be said to be of service to us in two ways—firstly, by burying or devouring dead animals which might render the air not only noxious to human health, but also hurtful to plants; and secondly, they help to fertilise the soil by placing beneath it matters very useful when decomposed, towards which decomposition the beetles lend their aid. The beetles now under consideration belong to the section called Rhyphophaga, or, in plain English, Filth-eaters; and it must be owned that the habits of both the land and the water species are a little offensive to our refined notions. The water beetles, indeed, prey both on land and in their usual element, which they quit at night occasionally. These are furnished with hind legs, which serve as paddles; they are the Philhydridae, or Water-lovers. Next to them is the group of the burying beetles which have legs fitted for running, short and square wing-cases, and antennae clubbed, the club or knob being large and round. Like the vultures, these carrion-seekers of the insect race are endowed with strong wings, which enable them to travel, when needful, long distances after the objects which, unlike most birds of prey, they can rarely discover by sight, but by smell or some sense unknown to us.

The Necrophori are more common in rural districts where habitations are sparingly distributed than they are in the vicinity of large towns. Possibly they consider that where the latter exist men ought to take upon themselves the duty of scavengers, and not require much aid from the insect world. Walls will not exclude them from a garden should they be desirous of entering it; and where there is one of these to be seen we may be almost certain that there are others not far off, for it is their wonted plan to work in parties. Strong and persevering as these insects are while at their toil, which is not so much for the benefit of themselves, but of their offspring, they could not succeed in some of their endeavours if they did not work together, and also on a mutual understanding. Not only may they be called gravediggers, they are also undertakers, for they take under whatever object it be upon which their attention is concentrated. Nor does it cease to be regarded with interest even after it has been hidden from view; for after a dead animal has been decently buried these beetles enter the earth themselves, or at all events the females do. It is beyond the power of the Necrophori to remove a quadruped, bird, or fish of any size from the place where they find it, so their plan is to sink a hole beneath the body and remove the earth which presses around it as it sinks into the cavity, until at last it is brought several inches below the surface, when by a continuance of the labour the earth is filled-in. Figuiier says that the depth at which a carcase is laid is from

7 to 10 inches in the instance of the burying beetles that are most common: this, however, is a little over-estimated. The head and the legs are, of course, the only implements the beetle can employ; but by changing its position, and alternately employing different pairs of legs, one of them has been seen to work on with scarcely a moment's pause for some hours. By several pushing or dragging together, these insects manage to shift a dead animal a little, should it not be precisely as they wish; but I can scarcely credit the statement of Gleditsch, that when he had set several of the *Necrophori* to bury a dead linnet, one of them, by an extraordinary effort, lifted the bird and placed it in the grave. Some credit is certainly due to this entomologist for having through nearly two months watched a number of these at their labours, giving them a variety of subjects to work upon. He found (and the experiment has been repeated by others), that if a dead animal was fastened to the end of a stick, and even tied thereto, the beetles will undermine the stick and gnaw asunder the string by which the carcase is secured. It would be curious to ascertain—which has not yet been done—whether the burying beetles would attempt to do anything with a dead animal lying amongst long grass, where digging could hardly be attempted.

The largest burying beetle found in Britain (*Necrophorus germanicus*, *fig. 1*) is nearly black; the other species are banded with orange and black, and of these *N. vespillo* (*fig. 2*) seems most generally distributed. The odour they give forth is peculiar and disagreeable; not, however, exactly resembling the products of decomposition, but rather musky, no doubt protecting the species from the attacks of some enemy. The larvæ also, long-bodied creatures, with scaly segments and very short legs, grow slowly, and, having attained their full size, form earth cocoons for themselves, coming forth as beetles in early summer. The poet has managed to throw a little romance about the proceedings of the burying beetles, and writes thus of them:—

"From sire to son through circling years  
Labour these watchful creatures, noting well  
If falls a small bird from the bending spray,  
Or mole toss'd out by ruthless hands, his home  
Laid waste, himself a corpse, where late he wrought  
With patient toil his humble shed to rear;  
Or brown mouse sleeping his last sleep—  
Each and all are laid the earth beneath  
With decent care."

In the tribe of *Silphidæ* are smaller species as serviceable to man as the *Necrophori*; some, indeed, more so—as, for ex-



Fig. 2.—Burying Beetles (*Necrophorus vespillo*) interring the body of a rat.\*

ample, the Four-spotted Silpha (*S. quadripunctata*), represented in the accompanying woodcut—*fig. 3*), a reddish brown beetle,



Fig. 1.—*Necrophorus germanicus*.\*



Fig. 3.—*Silpha quadripunctata*.\*

with two double spots on the elytra or wing-cases. At first glance it may seem to resemble a lady-bird, though the body is more elongated. In the perfect state these beetles have been seen feeding upon caterpillars on the Oak and other trees, while the

larvæ devour offensive and decaying substances, which are not interred by the parent beetles usually, though they had long ago the name of "Sextons" given to them, because they are sometimes to be seen digging into the earth, or into manure, &c., resting thereupon. It must be acknowledged that one of the *Silphidæ*—namely, *S. obscura*, has been found in the act of doing damage to Beetroot, which fact is, therefore, a partial set-off against the services of certain of its relatives. *S. lavigata* preys frequently upon snails; and despite the spume which these molluscs throw out when they are approached by an insect enemy, the beetle manages to overcome and devour them. The larvæ of the *Silphidæ* are likely enough to be turned up by the spade or fork, and as likely to be considered hurtful creatures, for they are black unpleasant-looking grubs, yet, with the one exception mentioned, rather useful than otherwise. They are much more rapid in their movements than the larvæ of the *Necrophori*.—J. R. S. C.

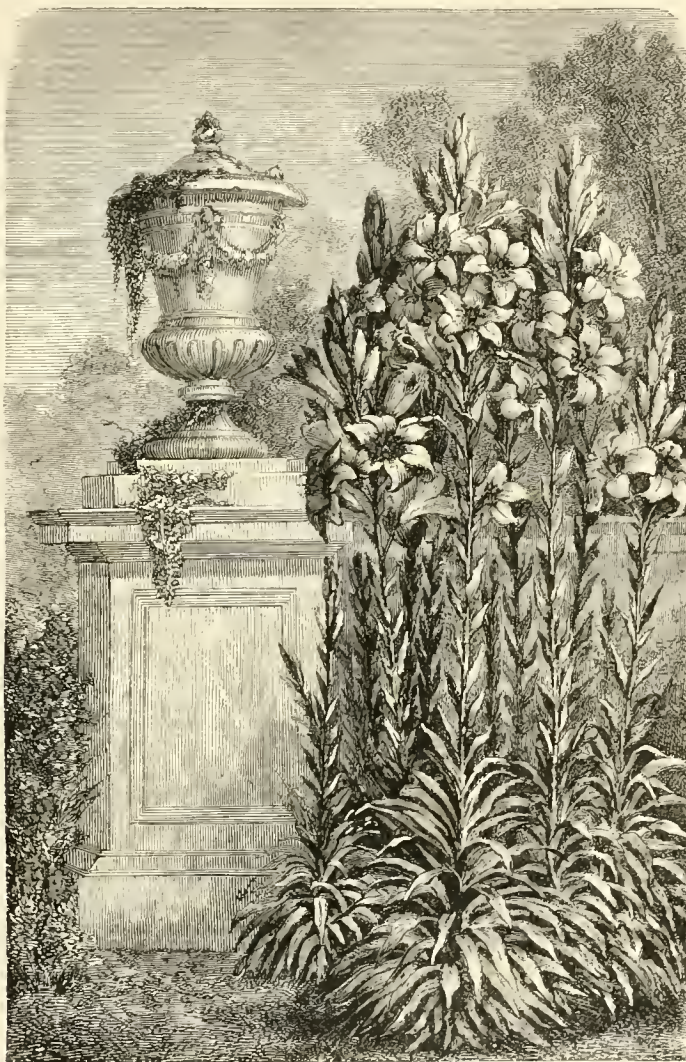
#### ASSOCIATION OF SCULPTURE WITH PLANTS.

WHATELEY observed justly of the dressed grounds, that "nothing should seem neglected near the house; it is a scene of the most cultivated nature; it ought to be enriched; it ought to be adorned; and design may be avowed in the plan, and expense in the execution. Even regularity is not ex-

\* From Figuier's "Insect World." Cassell's edition.

cluded; so capital a structure may extend its influence beyond its walls; but this power should be exercised only over its immediate appendages. The platform upon which the house stands is generally continued to a certain breadth on every side, and, whether it be pavement or gravel, may undoubtedly coincide with the shape of the building. The road which leads up to the door may go off from it in an equal angle, so that the two sides shall exactly correspond; and certain ornaments, though detached, are yet rather within the province of architecture than of gardening. Works of sculpture are not,

like buildings, objects familiar in scenes of cultivated nature; but vases, statues, and termini, are usual appendages to a considerable edifice; as such they may attend the mansion and trespass a little upon the garden, provided they are not carried so far into it as to lose their connection with the structure. Some pieces of sculpture also, such as vases and termini, may perhaps now and then be used to extend the appearance of a garden beyond its limits, and to raise the mead in which they are placed above the ordinary improvements of cultivated Nature. At other times they may be applied as ornaments to



Group of White Lilies.

the most polished lawns. The traditional ideas we have conceived of Arcadian scenes correspond with such decorations; and sometimes a solitary urn, inscribed to the memory of a person now no more, but who once frequented the shades where it stands, is an object equally elegant and interesting."

One test of a gardener's good taste is the planting he selects for near a terrace and vased wall. We never saw such structures look anything but heavy if round-headed shrubs were associated with them. Irish Yews and other pyramidal-formed plants are especially congruous with such architectures. Of flowers, the white Lily grouped near them, as shown in the accompanying woodcut, for which we are indebted to Cassell's edition of Figuier's "Vegetable World," is especially effective.

**PROLONGING LIFE IN CUT FLOWERS.**—M. Fremont, a chemist, in a letter to the French Society of Horticulture, mentions a

way of preserving cut flowers in a state of freshness. It is to dissolve sal-ammoniac, or chlorhydrate of ammonia (obtainable of any druggist) with the water in which the stems are put, in the proportion of five grains to a pint and a half of water. In this way, it is said, they will often keep fresh for a fortnight.—(*Irish Farmers' Gazette*.)

#### NOTES AND GLEANINGS.

We observe that M. Alégatière, of Lyons, will send out in May three new DOUBLE ZONAL GERANIUMS, raised by M. Jean Sisley. They appear to be very remarkable, *George Sand* having double flowers larger than any single one known. It is white when grown under glass, and rose-tinted in the open. *François Pertusati* has large double flowers, aurora, edged with white. *Carl Vogt* has medium-sized flowers of a salmon orange of a new shade.

At last, stirred into action probably by the prospect of the early completion of the new City Fruit and Vegetable Market, the Duke of Bedford has determined to cover-in COVENT GARDEN MARKET. An extraordinary general meeting of the Market Gardeners, Nurserymen, and Farmers' Association was held at the Bedford Head Hotel, Covent Garden, on the 7th inst., to take into consideration the model of the proposed covering. Several of the members were of opinion that the proposed erection was not high enough, and that the 4 feet left open on either side was very objectionable. The openings at the side and the low roof were stated to be for the convenience of those persons who occupy the upper rooms over the shops in the centre row. One of the members suggested that the roof should be carried up 4 feet above the parapet of the buildings on either side, which would afford plenty of light and ventilation to the upper rooms. It was ultimately resolved that a deputation should wait upon the agent to the Duke to thank him for the proposal of covering the market, and to suggest a few alterations and improvements in the model submitted.—(*Building News*.)

MR. ALFRED DE ROTHSCHILD, the Chairman of the ensuing GARDENERS' ROYAL BENEVOLENT INSTITUTION ANNIVERSARY DINNER, has named Thursday, the 2nd of July, for that purpose. It is the day after the great Rose Show at Kensington, and several of the leading exhibitors have promised to send their plants from the Exhibition to the London Tavern to assist in decorating the rooms.

MESSRS. SUTTON, of the Reading Royal Seed Establishment, are presenting a coloured geological map with their "Farmers' Year Book." They think it has long been a desideratum, as it points out to the farmer and landowner the geological strata of the district in which the farm is situated; and tables of the Grasses suitable to soils on the strata are given.

## NOTES ON VILLA AND SUBURBAN GARDENING.

THE amateur who possesses a greenhouse should, towards the beginning of next month, shift Geraniums that are well rooted, using a rather heavy and rich soil, potting, forcing, and keeping the plants well tied out and near the glass. See that Camellias are never allowed to get dry at the root, otherwise you may lose your buds, and do not expose the plants to cutting currents of air. Calceolarias that are well rooted in small pots should now have more pot-room. A soil of half loam and well-decayed dung or leaf mould, with a little sand, suits them well. Pelargoniums which are intended to bloom in the greenhouse must now be removed into their flowering pots, and the branches must moreover be tied-out if large symmetrical plants are desired. Those stopped in November will flower in May; a second lot should now be stopped to flower in June and July, and a third about the middle of April to bloom in August and September. For growing Pelargoniums I have never found anything equal to the parings of grass edgings, or thin turf one year old, and leaf mould and peat earth in proportions of four parts of the former to two parts of each of the latter roughly mixed together, but not sifted; in fact I never silt soil under any circumstances, unless for the purpose of taking the fine particles out, and using the turfy portions only. This compost, with the admixture of a little sand if the plant is delicate, or loam if of luxuriant growth, will answer for all kinds of greenhouse plants, with the exception of Heaths and other delicate-rooted hardwooded plants.

The best plan is to allow the soil in the pot to have the appearance of dryness, but never sufficient to make the plants flag, before a supply is given, which should then be pretty copious; but always empty water out of the pan or feeder in which the pot stands as soon as the soil is properly drained. The water used for the purpose ought always to be of about the same temperature as the room in which the plants grow. Never use it fresh from the pump; either let it stand in a warm room all night, or take off the chill by adding a little warm water to it, or the growth of the plants will be much checked.

The principles of correct planting in the open ground are the same as those which regulate pot culture, allowance being made for the altered circumstances of the plants; indeed, good planting is even more necessary for plants in pots, since they are so artificially situated, and have so little chance of being liberated from the bad management of man by any intervention of Nature. A tree may possibly get on in spite of the want of skill in the planter, because, the soil being favourable, the roots may escape from their pent-up position, and abundant rains may redispense the clods so unceremoniously thrown upon them; but let a plant be once badly potted, and its chance of flourishing is gone. The pot presents an impenetrable barrier to the roots, and the water applied only makes the soil more compact and less

capable of fulfilling its office. There is also this difference between planting in the open air and in pots:—In the one case the work only requires to be done once, while in the other the operation must often be renewed; yet how constantly is this particular forgotten by amateurs who are really fond of flowers, whose collections are sickly because the pots are full of labyrinths of roots, which in hopeless continuity perform pilgrimages around the walls of their prison, seeking a loophole for escape. Turn the mass out of the pot, and how curious is the spectacle. The soil, by some strange process, is gone, and in its place there is a coil of vegetable fibre, which in some cases has traversed six times round the pot in search of fresh nutriment.

The time has now arrived for the florist to bestir himself. Auriculas and Polyanthes must receive their spring dressing by removing the surface soil of each pot down to the roots, and replacing it with the usual compost. Avoid using rich manure for this or any other flower, for it may be asserted as a natural law, that as all plants like fresh soil and leaf mould, a compost of these two ingredients with a little sand will grow plants as healthy, though possibly not so luxuriantly, as a complicated admixture of more stimulating materials. After the plants are replaced in the frame they must have all the air possible by day and night in mild weather, but must be protected from frost. A gentle shower of rain will not injure them on a mild morning, but take care that the water does not stagnate in the centre of the plant, or the bloom will be injured.

Ranunculuses and Anemones should be planted now. Carnations and Picotee layers that have been stored in frames in small pots may now be removed into their blooming ones, taking care that the soil used does not contain wireworms, which are their most deadly enemies. Where there is convenience the plants may be returned to the frame after being potted, but where there is not they must be so placed together in a sheltered place that they can be protected from rains. Sow Carnation seed in pots or seed-pans, and protect it from rain and vermin.

In the flower garden finish the pruning of Roses; in doing so thin-out the weak shoots, and shorten the strong and well-ripened ones to four or six buds according to their strength. Strong-growing kinds such as *Brennus*, *Fulgens*, *Triomphe d'Angers*, and others of similar habit, with most of the *Noisette* Roses, when budded on tall stems make beautiful objects if instead of being shortened the shoots are turned down and tied to the lower parts of the stem. In the borders sow Sweet Peas and Larkspurs, and prepare for general sowings of annuals next month; but do not rake the borders at present, or they will be rendered almost impenetrable for the whole of the season. Hoe or fork them over 2 or 3 inches deep as often as you please, but do not rake them until the dry winds of March have abstracted a little of the superfluous moisture from the soil. For the sake of a few days' neatness in the early part of the spring, we frequently do more injury to the soil and summer flowers than can be remedied during the remainder of the season.

When the weather will permit, edgings of various kinds may be planted, such as Box, Thrift, Daisies, London Pride, or *Gentianella*; but while it continues cold care must be taken of anything liable to be injured by frost.

VEGETABLES.—As soon as the weather is favourable a small sowing of Peas and Beans may be made, and as the busy season is at hand everything that can now be done should be forwarded before that time. Ground intended for Onions and Carrots may be pointed over and well broken-up. Alterations and improvements (if any), around the villa should be proceeded with.

FRUIT.—If any fruit trees remain to be pruned they should be finished now; the Grape Vine especially, if not cut in autumn, must not be delayed.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### KITCHEN AND FRUIT GARDEN.

*Protecting Blossom from Spring Frosts.*—The forward state of the blossoms of Apricot trees demands that steps should be taken to protect them from frosts. Peach trees on south walls are also in a forward state, indeed more so than those grown in orchard houses. In many large gardens glass cases have been erected against the walls, and under good management they are certainly most efficient protectors. Some have gone so far as to cover their walls with glass in this way, and have fixed hot-water pipes as well. The ordinary coverings are formed of canvas, which is rolled-up under a wood or stone coping in the daytime. Movable wooden copings are the best; these may be made to project about 11 inches over the trees, being required only when the trees are in flower. They may be removed to a place under cover at other times, and will thus last much longer than if they were constantly exposed to the weather. We have used various materials for protecting the blossoms of fruit trees from frost. Frigid-dome and a material made by Collinge & Son, of Peel Street, Manchester, are the best we are at present acquainted with. The way to manage with the shading is to have poles laid against the wall and let into the ground about a foot. The poles need not come out more

than 3 feet from the base of the wall if it is high; if the walls are low 2 feet will be enough. Strong webbing should be sewn on to the top and bottom of the shading; it may then be nailed to the wall just under the coping, and at the top of each pole a bit of tape or string should be fastened to hold the covering when it is rolled up. A man with a light ladder can go round the walls and undo the strings in a few minutes; another follows with a hammer and nails, and fastens the covering moderately tight to the base of the poles. We also tried one season to cover pyramid Pears in the open garden by raising a framework round them and throwing a covering over; this entailed considerable trouble, and the result was not very satisfactory, for the trees which were covered did not fare better than those exposed. In whichever way the protecting material is used, it ought on no account to touch the blossoms.

We have been finishing trenching and digging, and will immediately proceed to clear the walks from weeds, and give them a fresh dressing of gravel. All such work ought to be finished as soon as possible.

#### FRUIT AND FORCING HOUSES.

**Pine Houses.**—Many Pines had been cut in the fruiting house, and this necessitated the removal of plants from the succession house to fill the space; at the same time the old material, which was composed of spent tan, was turned over and mixed with cocoa-nut fibre refuse. The beds in the succession house were also turned over, and the plants repotted. In doing this a good portion of the old and exhausted mould is removed, as well as the older leaves near the base of the plants. The compost must be rammed in firmly, the plants also being put in rather deeper than they were before. The bottom heat for newly-potted plants should be 90°, and a few degrees above this will be beneficial rather than otherwise, the object being to cause the emission of fresh roots. As the days lengthen more atmospheric moisture will be necessary. The evaporating troughs over the pipes, which have been kept dry up to this time, may now be kept full of water. Seventy degrees is the best night temperature, and this may fall a few degrees in very cold weather.

The first dish of *Strauberrys* was picked on the 20th—Black Prince. All things considered, this is the best variety for very early forcing; if the runners are layered in good time and well managed, however early the plants may be started, there is always a certainty of a crop. Keens' Seedling is the next in succession; this is much superior to it both as regards appearance and flavour. President is one of the very best for a main crop, and British Queen the latest. Forced Strawberry plants are persistently attacked by red spider, and good fruit cannot be obtained if this is not kept under. The plants may now be syringed twice a-day up to the time the fruit begins to colour, when syringing must be discontinued. The water must be applied with force to the under sides of the leaves.

**Dwarf Kidney Beans** that have been potted from the seed-boxes are apt to flag during bright sunshine; instead of shading, it is better to dew the plants over with a syringe.

Planted-out the first house of *Melons*; the compost had been in the house about ten days previously. A portion of fine loam was laid on the surface of the bed to raise a small mound where each plant was put in; this to a large extent prevents the plants from dying-off at the surface of the ground, as Melon plants very often do just before the fruit ripens. When the plants were put out the surface of the bed was dressed with rotten manure; this keeps it moist, and also retains water which, evaporating gently, is also beneficial to the plants. Pinched the points out of the growing shoots of Cucumbers, and trained the shoots to the trellis, removing also all decaying leaves from the plants. Smoke for thrips, and syringe in the morning for red spider.

*Melons and Cucumbers* may now be planted-out in hotbeds. To keep down superfluous heat and steam it is a good plan to cover the surface of the beds with turves, the grass side being placed under; on this the hills should be raised. When it is ascertained that the temperature is all right, the plants can be turned out, one or two being put on each hill. The glass must be washed before this, as it is highly desirable to have as much light as can possibly be obtained.

**Mushroom House.**—Fresh beds may be made at any time, the object being either to have a continuous supply or to have them at the time they are required for consumption. It is not always possible to ascertain how a bed will bear. The spawn is not at all times equally good, and at another time the manure of which the bed is composed is at fault—it is, perhaps, overheated or too damp; in either case much of the spawn is injured. The main element of success in Mushroom culture is to have the manure well worked previous to use. It should be laid out on the floor of a dry shed, after having been placed in a heap to ferment; when moderately dry the bed may be made up—it should be beaten down firmly with a rammer or the back of a spade. About the third or fourth day it can be ascertained how the bed will heat, and if the temperature is suitable at that time the spawn may be put in. Break the bricks into pieces as large as pigeons' eggs, insert them to the depth of 1½ inch, and afterwards cover the bed with loam. Should the heat decline before

the Mushrooms appear, cover with oat straw or hay; 55° is a good temperature.

**Orchard House.**—The blossoms are now in a forward state, and on frosty nights the pipes are warmed sufficiently to keep out the frost. Brown scale has been troublesome to us, but it has always been kept under by going over the trees with a sponge dipped in water wherein some soft soap has been dissolved. Aphides increase as the blossoms expand; there is also green fly on the Strawberry plants; so that the house will be well fumigated with tobacco. Ventilate freely in fine weather.

#### STOVE AND GREENHOUSE.

If stove plants are not free from scale and bug they ought to be washed by hand. If this work is neglected until later in the season the insects increase so fast, and there is so little time to attend to them, that the result by midsummer is that the plants are overrun; besides, it is not possible to cleanse such subjects as *Stephanotis* and *Ixoras* from bug if this pest get into the flower heads.

Both hard and softwooded plants may be potted now. The greenhouse is gay with spring-flowering plants, forced Roses, &c. These last are invariably attacked by green fly, and should be fumigated before the flower buds are much advanced, as the flowers smell of tobacco if the buds are partially opened when the house is smoked. Keep the plants as near the glass as possible, and water with manure water, which will bring up the colour in the flowers.

*Hyacinths* should also be taken out of the forcing house as the first flowers open; sticks must be placed to them in good time, and the bells may be regulated with a pointed stick. The bells on some of the varieties are thinly placed, and have also a tendency to hang down, which is objectionable. Such sorts may be improved by lifting the bells up with a stick or pencil, so that they may stand out in a horizontal position.

*Stage and Fancy Pelargoniums* should be trained now if they are intended to make specimen plants. As they are grown by the London exhibitors the shoots are tied down to a wire fastened round the pot. A wire is fastened under the rim first, then two or three sticks are laid over the pots and tied down to the wire so as to project from 3 to 9 inches according to the size of the plant; a stout ring of wire is then tied down to the ends of the sticks, and in this way a plant may be trained-out to a large size. If the object is to secure large trusses the shoots should be few in number and ought not to be bent in any way.

*Chrysanthemums* that were struck from cuttings in December have been potted into 5-inch pots. It is well not to allow such plants to receive any check to their growth. The point is taken out of the plant when it is about 5 inches high; this causes the production of from five to seven shoots near the top, and will allow a clear stem about 2 inches above the surface of the mould. Plants intended to produce flowers for exhibition are not pinched at all; as the leading shoot grows it is tied to a stick to preserve it from injury.

#### FLOWER GARDEN.

Roll the lawn and also the walks; no litter should be allowed to accumulate on beds or borders. Hardy herbaceous plants may now be divided if it is desirable to increase the stock. Bulbous plants should not be disturbed now, otherwise the flowers will not be so good. It is best to remove all such plants in the autumn.

This is the best time to propagate *Phloxes*. The stools, if two or three years old, will have thrown-up a number of shoots; all of them may be removed except five. The cuttings may either be put in out of doors or in pots. If the former, a bed should be marked out, and 2 inches of fine mould placed on the surface; the cuttings may then be put in 3 inches apart and 6 inches between the rows. If in pots, it is best to put one cutting in the centre of a small pot, and then place the pots in a gentle hot-bed; when well rooted give air freely and shift into 5-inch pots, or plant in beds. When grown in pots the *Phlox* is very useful for decorating the greenhouse or conservatory in autumn.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

H. Cannell, Station Road, Woolwich, S.E.—*Floral Guide for 1874*.

Sutton & Sons, Reading.—*Sutton's Farmer's Year-Book and Gardener's Manual*.

Ewing & Co., Norfolk Nurseries, Norwich.—*List of New Roses*.

George Yates, 29, Little Underbank, Stockport.—*Descriptive Catalogue of Select Vegetable and Flower Seeds*.

J. Brunning & Co., 1, Market Place, Great Yarmouth.—*General Seed Catalogue*.

#### TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

NAMING PLANTS.—We are most willing to name plants, and have superior botanical aid for the purpose; yet, even under the most favourable circum-

stances it is difficult to discriminate any one species of a numerous genus. We therefore ask those who wish us to name plants to send their specimens in a small box; the postage is either nothing extra or trivially increased. We have just received specimens of rare Orchids literally smashed by the post-office punches, so as to be totally unidentifiable.

**POISONING MICE (W. C.).**—We do not know the process of preparing poisoned wheat for destroying mice, nor have we found the poisoned wheat so readily taken by mice as ordinary rat poison, which may be had of any chemist. We melt some lard and with oatmeal form a kind of dry paste, which we place in their haunts for two or three nights; afterwards we mix poison with lard and oatmeal prepared in the same way, and place it in their haunts, taking care that no domestic animal can partake of it. The mice will usually take the poison, but rats are more fastidious, and are best enticed for a few nights prior to placing the poison. Both rats and mice are more effectually poisoned by feeding them for a few nights before putting down the poison.

**TOMATOES IN CUCUMBER HOUSE (C. S.).**—The temperature of a Cucumber house is not too warm for Tomatoes, and the seed-leaves falling prematurely is rather to be attributed to dryness than to the moisture of the house; but we should say it had resulted from a sudden check the plants had received. The plants do well trained to the back wall and on the roof. It is not advisable to syringe Cucumbers when the house is shut-up for the day while the sun is full on them; but the house, floors, walls, and other surfaces should then be sprinkled with water of the temperature of the house.

**VINE BORDER COVERING (T. Goldsmith).**—The border having been covered up since November will be dry—too dry. We should therefore remove the covering, thoroughly moisten the border with water at 60°, and then put on the fresh horse droppings you have, and tread them firm. If they are so thick as to raise a gentle heat all the better. Cover up with the boards, and they need not be removed until April, when you may again water, and this time with water at 70°, and on the droppings, so that nourishment will be carried down to the roots. We should put on the boards for at least another month, again remove and water, and every fine day remove the covering, replacing it at night and when heavy rains prevail. Remove it by degrees, so as to entirely disperse with it in June.

**POTATOES FOR STIFF SOIL (Idem).**—Myatt's Ashleaf for early, Dalmahoy for second, and Walker's Regent for main crop. You will require about a bushel of Myatt's Ashleaf, two of Dalmahoy, and four of Walker's Regent, but much depends on the size of the sets, and we may not have hit your demands for early supply, but you can remedy that by altering the quantity to suit your needs.

**AMARYLLIS AND LILUM FROM SEED (W. N. C. H.).**—The cause of the seed failing is, no doubt, your having kept it too long out of the ground. The seed should be sown as soon as it is ripe, or be kept in silver sand until spring, and sown (the earlier the better), in pots or pans filled to within about half an inch of the rim with a compost of fibrous loam, peat, and leaf soil in equal proportions, with a sixth of silver sand, draining efficiently, and having the surface fine and even. Scatter the seeds evenly, and cover with fine soil to a depth equal to the diameter of the seeds, and place in a hotbed or house with a temperature of 65° to 75°, and keep moist. When the *Liliums* are up keep them near the glass, by degrees harden them off and remove to a greenhouse, and by autumn they will have formed small bulbs, and may be potted-off singly. The *Amaryllis* should be continued and grown-on in heat, not drying them off in winter, but keeping them moist, yet not so moist as when in growth, and pot-off singly when they are growing freely; encourage growth by a moist atmosphere and brisk bottom heat. In about three years they may be had in a flowering state.

**EPACRIS AND ERICAS AFTER FLOWERING (Inquirer).**—In a cold greenhouse *Epacris* should flower in February, but we think by a cold greenhouse you mean one from which frost is excluded, and in such they may flower somewhat earlier. After flowering they should be cut-in to within about an inch of the old wood, and the *Ericas*, if of the winter-flowering kinds, should be trimmed-in so as to form compact plants, but leaving some small shoots; in fact, merely cut-in the long straggling growths. Water moderately, but encourage growth by a tolerably close and moist atmosphere, and if the plants need potting it should be done when the young shoots are about an inch long, merely loosening the sides of the ball, draining the pots well, and keeping the neck or collar of the plants high in the centre of the pots. Shade from bright sun for a few days after potting, and after that admit air and light, of which these plants can hardly have too much. Water only when the soil becomes dry, but before the plants flag, then give a thorough supply. Sandy peat soil is the only suitable compost. The *Camellias* should be repotted, removing any old soil coming away freely from the roots, which must not be injured. Use a compost of the top inch of a pasture or common where the soil is light and sandy, and turf torn-up rather fine but not sifted. Pot very firmly, and finish-off with the finer portions of the compost. The neck of the plants should be level with the rims of the pots, and the soil should fall towards the rim so as to leave space for water. Water abundantly when the plants are growing, and at all times keep the soil moist, avoiding, however, making it sodden by needless watering. In hot and bright weather *Camellias* are the better of a slight shade.

**PEACH CULTURE (A New Beginner).**—The stoning period is when the Peach has attained to about half its size, and the shell of the seed is forming. The "Fruit Manual," price 4d., and Pearson's "Orchard House," price 1s. 6d., would suit you. They can be had by post from our office.

**HEATING VINERIES (Cosmos).**—The "large vinery" planted throughout with late varieties, 150 feet long, 21 feet wide, and 15 feet of rafter, will be efficiently heated by two rows up both sides of the house and across one end; and you should not have less, as it is not good for the Vines to heat the pipes highly, and this is a waste of fuel. There is no greater mistake than a small quantity of piping, which to maintain the required temperature requires to be made very hot. The pipes, we presume, are to be level, and 9 inches to a foot clear of the border. We should arrange to have the valves all on the side of the house next the boiler, and directly the pipes enter the houses, and on the main flow and return pipe, in each case so as to completely shut off the water: thus you will only need two valves for each division. The main flow should in this case be branched as soon as it enters the house, as also must the return pipes; and after they divide you can put in the valves, and you will thereby be able to heat one house or the other separately or together as wished, and without any piping being needlessly heated, as would be the case were you to have the valves on the opposite side of the house to where the water enters the house, and as your sketch indicates. In other respects the heating proposed is satisfactory. The other vinery in three divisions will be best heated by 4-inch pipes (unless you wish to save fuel, when a less dia-

meter of pipe with the same heating surface would be better), as the *Hamburgh* house will be forced, and the *Muscata* house requires a good heat. The *Lady Downe's* house ought also to have four rows of piping, as the Vines require strong heat, and we should heat somewhat differently from what you show. We would branch from the main, directly entering the *Muscata* house, for the *Hamburgh* house, and have valves on both the flow and return pipes for that house, branching in the *Hamburgh* house as you show. We should not take the pipes across the end of the *Muscata* house where the pipes enter, nor across that end at all, but turn to the right and take the pipe up that side to the top, and continue it into the other house (*Lady Downe's*), but with an elbow at the end of the *Muscata* house, and continue across the end and up the other side, and thence return by the same route or alongside the flow pipe by a return to the place whence the main flow branched or divided; and there an elbow or branch must be introduced to take the return pipe from the *Lady Downe's* house, and thence alongside the flow back to the boiler. Continue the flow round the *Lady Downe's* house, and take a return alongside as in the *Muscata* house, omitting in both cases the end where the water enters. You will need a valve on the flow and return of *Lady Downe's* house, and on the flow and return of the *Muscata* house where it crosses the end, so that you can reduce the heat in the *Muscata* house to a minimum when the *Lady Downe's* house is to be heated and not the *Muscata* house; and you can have a valve on the flow and return pipes of the *Muscata* house directly on leaving the main, by which you can keep both the *Muscata* and *Lady Downe's* houses cool when the *Hamburgh* house is being forced. By the valves you can regulate the heat to a nicety, but have good screw valves of the best make. Our boiler's flow pipes have 1 foot 6 inches rise direct from the boiler, but a foot is as good as a yard. It makes no difference to the circulation of the water; but we advise you to make the water flow the reverse way to the general principle—let the pipes be all flows, and, when the pipes fall, fall at once directly to the return pipe of each house, and the main return direct to the bottom of the boiler. This gives an impetus to the circulation, and better circulation with more uniformity of heat throughout the pipes. Three-inch pipes will certainly give you the heat you need, but you will at times require to heat the pipes more than is good for the Vines; therefore we advise a large amount of piping in preference to a small amount and hot, both for economy in fuel and for successful culture. We would further state, that fuel being a great consideration, we should seek to reduce its consumption, and therefore have to point out that were you to use 4-inch pipes only for the main flows and returns, and heat the houses with 2-inch instead of 4-inch piping, having four 2-inch instead of two 4-inch, you would have the same amount of heated surface and only half the quantity of water. For instance, a 4-inch pipe 15 feet long contains eight gallons of water; a 2-inch pipe 15 feet long contains two gallons. In this way you would have a greater first-cost in pipes, but the money would give a good interest in saving fuel by there being only half the quantity of water to heat.

**TAN NOT HEATING (J. H. L.).**—The tan is probably old, and as you say "refuse." Very likely it will not heat, for it ought to have done so in the time you name. Part of it may be Larch bark, which is now much used in tanning but is not nearly so good for heating purposes as Oak; indeed, some we had has not heated at all. The only thing you can mix with it is some fresh tan from the pits. This will, no doubt, cause a gentle heat.

**POT VINE PRUNING (Idem).**—If you intend to keep the Vine in the pot and so fruit it, it should not now be pruned, nor, indeed, if you plant it out; but you may depress the cane so as to make it break regularly, and as they show rub off the shoots from the ground to where you want them, leaving two or three for side shoots, and one for a leader to be trained up the rafter. The cane can be cut back without fear of bleeding when the Vine has made leaves. If you fruit it this year in the pot leave it at its full length. So long as the wood is not broken the cane will not be the worse of being bent, though if twisted so as to splinter it will bleed at that part.

**PLANTS FOR CRAGS AND ROCKY GROUND (E. O. B.).**—The following are rock or alpine plants, and will, no doubt, succeed with you if looked over occasionally so as not to be overgrown by the natural vegetation:—*Alyssum saxatile* and var. *compactum*, *Ajuga reptans*, *Anemone pennina*, *Antennaria hypericifolia*, *Antirrhinum*, *Arabis albidula*, *A. alpina*, *A. bellidifolia*, *Arenaria verna*, *Aubrietia deltoidea grandiflora*, *A. græca*, *Campanula garganica*, *C. Jamesoni*, *Cerastium tomentosum*, *Cheiranthus alpinus*, *Cistus monensis*, *C. argenteus*, *C. ladaniensis*, *Cyclamen Coum*, *C. neapolitanum*, *C. europæum*, *Daphne Cneorum*, *Draba aizoides*, *Erinus alpinus*, *Erythraea aggregata*, *Gentiana prostrata*, *G. triquetra*, *Gentiana caudex*, *G. verna*, *Glechoma hederacea variegata*, *Helianthemum canum*, *Iberis saxatilis*, *I. Tenoreana*, *Lepigonum eupretre*, *Linaria alpina*, *Lithospermum frutescens*, *Meconopsis cambrica*, *Peperaw alpinum*, *Phlox Nelsoni*, *P. verna*, *Lotus corniculatus flore-pleno*, *Saxifraga affinis*, *aizoides*, *caryophylla*, *Cymbalaria longifolia*, *palmata*, *oppositifolia*, and *umbrosa*; *Sedum acre*, *anglicum*, *kumtschaticum*, *Ewersii*, *opulidum*, *roseum*, *glaucescens*; *Silene acaulis*, *Sempervivum arachnoides*, *S. californicum*, *S. globiferum*, *Statice alpina*, and *Vincas herbaceae*, major *gigantissima*, minor, and minor plena.

**ALPINE STRAWBERRY SEED (Carolus).**—Write to the seedsmen who advertise in our columns.

**ANNUALS FOR CUT FLOWERS (H. D.).**—We presume you want hardy annuals such as *Alyssum maritimum*, *Asperula azurea setosa*, *Calliopsis Burridgei*, *C. marmorata nana*, *Candytuft*, *crimson*, *sweet-scented*, and *White Rocket*; *Centaurea Cyanus major* and *minor*; *Centranthus macrophyllus*, *Chrysanthemum Burridgeanum*, *C. Dummerti flore-pleno*, *Collinsia bartschifolia*, *Erysimum arkansanum*, *Gilia tricolor*, *Godetia roseo-alba*, *Helichrysum bracteatum* and *monstrosum* in variety; *Larkspur*, *Branching* and *Rocket*; *Leptosiphon densiflorus* and *densiflorus albus*; *Love-lies-bleeding*, *Lupine*, *blue*, *white*, *rose*, and *yellow*; *Lupinus nanus*, *Mignonette*, *Tom Thumb Tropæolum*, *Invincible Sweet Pea*, *Double Dwarf Scabious*, *Schizopetalon Walkeri*, *Senecio elegans*, *Sweet Sultan*, *purple*, *white*, and *yellow*; and *Whitlavia grandiflora*. *Collinsia bicolor* may be sown rather thinly in light rich soil—in loam and leaf soil—and placed in a cold frame, and the plants thinned-out to an inch apart, watering as required, and admitting abundance of light and air. *Rhodanthe Manglesi* sow in a smaller size of pot, say 3-inch, placing about half a dozen seeds in a pot, and using a compost of equal parts of fibrous loam, leaf soil, and sandy peat. Put the pots in a hotbed and near the glass. Shift into 6-inch pots, keeping the ball entire, and not covering lower than the seed leaves; water moderately and afford a light airy position in the greenhouse; or the plant may be turned out of doors in a sunny exposure in light rich soil.

**DENDROBIUM HEDYOSMUM CULTURE (Glenbrook).**—The flowers are greenish white when they first expand; they afterwards become almost pure white, and are delicately fragrant. This species, like the majority of the *Burmese* Orchids, requires strong moist heat to grow in, and consequently we fear, with only a cold greenhouse at your command, you cannot hope to be suc-

careful in its cultivation. It would be much better to exchange it with some of your neighbours who possess a stove. The plant in question should be fastened upon a block of wood with just a little sphagnum moss, and until it begins to root and grow a little it should be hung-up head downwards; this will prevent water lodging about the eyes and rotting them, which often occurs when newly-introduced Orchids are subjected to the same treatment as those already established. In answer to your query respecting the introducing of Orchids, we may say that good, new, or rare species would pay to import; but it generally happens that those persons who send home Orchids to their amateur friends have no knowledge of what kinds we have in cultivation in Europe, and, in addition, generally send those easiest to obtain; and the result is, that amateurs' consignments seldom realise the cost of the freight. On the other hand, if your friends have a good knowledge of these plants and can send you home new or rare kinds, we should advise you to make the venture.

**POINCIANA REOIA CULTURE (Idem).**—It certainly must be kept in strong moist heat, and cannot be successfully grown out of stove heat. When growth is completed these plants require a good dry season, or season of rest; but amateurs, and indeed professional gardeners, too often forget their plants are in pots, and when they treat them to a thorough dry-off as it is termed, they destroy every particle of roots the plants have. This, however, does not occur in a state of nature; the roots are not exposed all round to the dryness of the atmosphere, and although the surface soil may be well parched and baked, there are sure to be some roots deep down in the soil where moisture is to be found. The above error, we are firmly convinced, is the reason we usually fail in the cultivation of many beautiful plants from what are termed dry countries.

**GRAFTING WEEPING ASH (M. E.).**—Take off the scions now, keep with the ends in moist clay, and graft at the end of March, or if then cold during the first mild weather in April.

**DAPHNE INDICA CULTURE (Idem).**—Use a compost of equal parts of peat and loam, with one-sixth of silver sand. The peat and loam should be fibrous and torn-up rather fine, and afford good drainage. Repot when the plant commences growth, and keep rather moist and shaded when making fresh growth, otherwise afford a light airy position. It is not unusual for the plant to have yellow leaves at this season, but if last year's leaves are so affected we should place the plant in gentle moist heat and encourage growth. The roots are probably in a wet sour soil; remedy it at once.

**HYDRANGEA JAPONICA (Idem).**—Cut down now, but leave sufficient of the ripened shoots for flowering, which they will do in a greenhouse in July, or earlier according to the temperature. The plants should be potted when they commence growth, or now; in doing so remove as much of the old soil as can be taken away without injuring the roots, repot in the same or a larger size of pot, and when this is full of roots shift into a size larger. Water abundantly, affording a light airy position. Beyond pegging-down and tying-out the shoots no other treatment is required.

**LAWN MOWERS (E. R. P.).**—You will obtain all particulars if you write to the makers, Blackfriars Road, London.

**NAMES OF FRUITS (T. F.).**—The Apple is the Winter Codlin, and the Pear Marsh Bergamot.

**NAMES OF PLANTS (W. A. E.).**—We are sorry that the flower between the leaves escaped our notice, it must have been smashed flat. The shoots had only leaves on them, and we cannot undertake to name plants unless their flowers are sent. Specimens should be in a box.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### CONDITION.

SOME weeks ago a correspondent expressed the opinion that both myself and the judges laid far too much stress on the condition of fowls at shows, adding the curious assertion that nothing was so easy of attainment! That does not seem to be the general experience, however; and I can call to mind many occasions when I have seen pens of really sterling merit compelled to occupy an inferior position because they were not in good show trim. Such birds are not unfrequently "claimed" by knowing judges, and the former owners feel a little natural vexation to find them score a succession of triumphs in more skilful hands. I propose to say a few words upon this subject, in the hope that they may bear fruit before the next show season.

First of all, of course, good condition implies good health. There may be health without good condition; but without health really good condition is impossible. And when fowls have a good open grass run in clear country air which has no smoke to dirty the plumage, if they are even decently fed and cared for, they attain, without any trouble at all, a condition which leaves nothing to be desired. Their combs are bright, their plumage clean and close, their carriage sprightly and vigorous. And it is only fair to say that some of our "leviathan" exhibitors owe most of the bloom in which they show their birds very much to these great natural advantages. Mr. Arkwright, Lady Gwydyr, Mr. Lingwood, Mr. Maynard, Mr. Beldon, and many others—all have clear country air and country grass to aid them; and all who have these need very little more. I might go further, and say they need *nothing* more beyond seeing that the arrangements in the houses, &c., are such that the plumage never gets damaged, and especially that there is nothing to catch and injure the tails of the cocks. In such circumstances I would not advise iron, or tonics, or any artificial treatment whatever.

Even a limited grass run, such as can sometimes be had near a town, will do much towards success. Such I now myself enjoy, and I get with hardly any trouble much better condition than I could at Bristol, where I had none, and had not time for the necessary treatment in lieu of it. All needed even here will be

to give such feeding as shall result in vigorous health, and then wash the fowls as required, on which we shall have a word or two by-and-by.

In strict confinement it is that the difficulties begin; and here it is that, in my opinion, and according to my experience, the replies often given to correspondents are somewhat at fault, various things being again and again denounced as "quackery" which are really valuable aids. To take certain tonics, for instance. Fowls in a state of nature do not need them. But there is in a Hare or a Pheasant, as everyone knows, an aromatic flavour, which shows that they get naturally something very analogous to such spices as we are considering; and we know also by personal experience that we cannot live healthily upon the same diet when following sedentary occupations as if engaged in an out-door life. Nay, the very "ground oats" or any other soft food, as so constantly recommended, is so far quite "unnatural" to a fowl; it is simply found better adapted to the domesticated animal. Even to fowls thus confined, however, I do not advise tonics to be given regularly—only in cold, or wet, or moulting seasons, or when "getting into condition," which brings me back to my immediate subject.

The object as regards diet must still be the same—viz., to maintain the most perfect health; and I assert fearlessly, that as regards all breeds adapted for confinement this consists in giving rather less than most people give of soft food and grain—keeping the fowls rather spare, in fact—but giving a little cooked meat regularly, and plenty of green food every day. If worms or insects can be obtained instead of meat all the better, and a very little is sufficient, while much is actually injurious. Health can be maintained without any meat at all; but all who remember how constantly a fowl is seeking for insect food when at liberty, and how much it obtains, will readily believe me when I say that a little is needed for that highest degree of health and spirits which we are considering. In most cases table scraps helped out with pot liquor will give all that is needed. As to green food, of any that can be got they can hardly have too much; and if none can be procured, minced turnips may be substituted, and when the birds tire of this the turnips can be boiled and mixed with meal. But really green food is much the best; and as the result of all, the birds should be kept just a shade thin; hungry, healthy, happy, with bright red combs, and a slightly sharp breath, but with good hard flesh on each side of it. Such a bird, if its house has been arranged with the same precautions as to damaging its plumage, however small that house and run may be, can be shown in the very height of condition.

I may be contradicted here. I have again and again heard it said that birds "have to be" fattened-up to an unhealthy state in order to stand a chance of winning. I reply without the least hesitation that this is not now the case, whatever it may have been; and that this mistake is one of the reasons why so many people fail. They have heard people must so fatten, and they try to do it, and spoil their birds. I see even noted exhibitors do it, and I grant they often win; but it is in spite of it, and a very large proportion of the very best birds each season are shown in thoroughly hard feather, and are bred from with perfect success after. I never fattened a bird for show in my life, and for one who exhibits so little I have had fair success. No! feed your birds only as much as will keep them healthy—no more. So fed, the meat and the green food will keep the plumage close and the comb red, which cannot be got in confinement without these items of diet.

Then, some four, or even only three weeks before the show season commences, you may, if you desire, give a little preparation. Feed a very little more, adding to the soft food a very little of any aromatic tonics in powder—say a mixture of gentian, ginger, and aniseed—beginning with a very little indeed, and ending with only enough to give a slight flavour. And every three days mix the meal with linseed stewed into a jelly instead of mere hot water, which will add greatly to the gloss on the plumage. But still, never overfeed the appetite: I say only "a little" more, remember, not much.

Then a week before the show examine your birds. Barring misfortune, they should and will be sound in feather, healthy, hearty, with a rich gloss on the feathers, but very likely dirty. And it is here that perhaps most amateurs fail, by omitting to provide what is an absolute necessity for showing birds in confinement with credit—namely, some place where they can be kept clean. If a spare room littered with soft straw can be given, that will do; but on the whole I prefer either a pen, some 6 feet square, floored with perfectly clean sand, or pens like show pens, only 3 feet square. These last are most convenient, and get the fowls used to confinement, which is important; for most young birds are very wild when first confined, and if then sent to a show almost always destroy their tails, and so lose their chance; whereas about three days in a larger pen about a yard square, and with no one to frighten them till they have calmed down a bit (after which they should be visited and petted as much as possible), will make them perfectly quiet and save their beautiful plumes.

If the birds are dark in colour they will not usually need

washing, but a clean handkerchief held in the steam of boiling water and smoothed over the feathers while slightly damp will remove much dirt, and the rest will, in most cases, disappear during a week's confinement in the pen, which should be littered with either sawdust or clean straw-chaff finely cut, and cleaned out regularly every morning and evening. Those who have never tried it will wonder how rapidly a fowl gets clean when thus penned-up for a short time in a clean place. But white birds, or which have white about them, or buffs, will need washing. Now here again the mistake of most amateurs is that they never attempt to wash a fowl till they want to send it to a show, when they are pretty sure to "make a mess" of it. They should try once or twice on their commoner birds first, by which they would get experience and confidence, and come out all right. I would begin with a cock, which is much easier to wash than a hen, as his narrow hackle feathers do not need to web again so perfectly in order to look well; and moreover, in many breeds, it is only needed to wash part of him, such as hackle, saddle, back, and wings. In such cases a good, solid, rather rounded nail-brush is the thing. If the bird is white, first blue the water. I do not consider this "dyeing"—in fact, if there be enough blue to dye the bird at all, the white is spoilt, of which there were some curious examples in the Silky class at the last Palace Show: but a little blue (and even that little looks very blue in the pen) gives a wonderful brilliancy to a good white bird, and every exhibitor is considered to have a perfect right to use it, as all the good "washers" certainly do. Make the water comfortably warm, and first of all scrub the head and comb well and briskly with soap and water. Then with the sponge wet as much as you can the hackle, back, and saddle, after which pass the soap over it a few times, and then after well soaping your nail-brush, rub it sideways repeatedly over every part till you judge all the dirt is off, always brushing straight down the feather, and taking no pains either to wet down to the skin or to avoid doing so. When you have done, while your assistant (to thus partially wash a bird requires one, though not to wash him wholly) holds him over the pan, you must sponge the soap off plentifully, letting the water stream out of the sponge till you are sure all the soap is out; after which you have no more to do than wipe-off as much as you can with the sponge squeezed dry, and put the bird in an ordinary show-basket, lined with linen or canvas, close by the fire till he is dry. A show-basket lined is best, because it keeps off and equalises the heat of the fire.

If you can have no assistant you may do very well by making in the middle of a jack-towel two cross-lits—thus, —|—, with about 4 inches between them. You pass the bird's legs and thighs through these holes, and then hang the towel by the ends to a hook in the ceiling or a joist overhead. You only need take care all the fluff feathers are nicely through the holes, and the bird, being helpless, is generally very quiet.

But hens, or birds light-coloured all over, need a thorough washing. Here, again, some of the directions given are at fault, for so long as you try to wet only the "surface of the feather," as I often see stated, you will never wash a fowl decently. I know, for I tried that plan myself till I was sick of it. No, you must stand your bird in the water. In fact, you had better have two pans, one full of good strong suds. Anyway, you must wash thoroughly, but in this case with a sponge, not using the brush, which would prevent all but hackle feathers webbing again. You only need take care not to rub the wrong way; with this exception, wash as much as you like, and be sure the plumage is wet through. The water being warm, the bird may faint, in which case there is no cause for alarm, as a dip in cold water will almost always revive it. The head should always be well scrubbed with the brush, however, as nothing sets off a bird more than a nice bright comb and clean head. When clean all soap must be washed thoroughly out as before, for which two distinct tubs or "waters" are much the best and most certain, while a little borax in the water also assists to get the soap thoroughly out. This is the essential point, for if any, even the least soap remain, the feather in that part will appear draggled, and will not web properly; but if well cleaned, by next morning, or when dry, all will be right again, with the exception that the gloss will have been removed by the washing. That is just the reason why the operation should be performed some days before the show; for in that time, with the help of the linseed, there will be a fresh secretion of oil, and the birds being kept perfectly clean in the pen, will be in the very height of condition. For white or buff fowls gloss is of less importance, and these are very often washed the day before showing. Many birds, if kept in proper hard plumage, would not need washing; but a loose-feathered bird always becomes comparatively dirty. On the other hand, such birds as Cochine, even though clean, are often washed merely to increase the apparent size, as washing causes the fluff, and, indeed, the whole plumage, to "stand out" more than it did before.

Birds bred in confinement cannot be shown often with success, or even safety; once in three weeks or a month is enough. I know a contrary opinion popularly prevails; but I also know

that while many exhibitors do exceed this rule, they suffer the penalty. One well-known exhibitor has had several birds returned to him dead this season, and I have many times seen beautiful birds which could barely stand, while the barrenness of celebrated hene has become almost proverbial. Short of this, the pale flabby comb and listless air tell sad tales; and so far from agreeing with the correspondent I referred to at the commencement, that judges lay too much stress upon condition, I think they would do well to lay more—so far, at least, as to disqualify far earlier than they now do for evident signs of over-showing. They might by this offend one or two, but I believe they would give satisfaction to the great body of exhibitors and to all real breeders of fowls; and though I can never join in the outcry against people "winning everywhere" with birds they have "bought at any price," and never have joined in it, believing that by their spirited purchases they are one of the great supports of "the fancy," I do think that so far as I have now suggested the judges might and ought to go in mere humanity, and that as soon as their intention to do so was clearly understood the whole body of fanciers would feel grateful. I must say that I have seen prizes won this season by birds whose "condition" did not deserve it, and which was to a humane man or true fancier really pitiable; that birds have, in fact, won prizes no bird could win and remain in health; and I need hardly point out that this might be checked without any change in the wholesome maxim, "Let the best bird" win, and that so doing would open the doors of the prize lists to a larger number of really good birds, and so encourage other fanciers. I do not complain of any particular judge. The line between fair condition and "overshown" condition cannot be a very marked one, and all I suggest or ask is that the judges draw it rather tighter. I believe that in so doing they would be serving the best interests of all.—L. WRIGHT.

### THE BROMLEY PRIZE CARDS.

A QUESTION was asked some time ago in the Journal previous to the Bromley Show whether it was a *bonâ-fide* concern, and a prompt reply given that it was. Doubtless the answer was correct. The Show has been held, and the prizes paid; but on receiving my money I found that I had been mulcted of 1s. for each prize—and for what? For my prize card! Now when the Society issued its schedule, amongst other inducements held out to exhibitors was one that their cards would be printed in gold on leather, and with a representation of the particular breed for which the prize was given. I do not suppose that any person was induced to exhibit by such a tempting bait; but neither do I suppose that anyone imagined that this wonderful gift was to be had at the exhibitors' expense. But the Committee of the Bromley Show are an ingenious body; they have had these cards printed on American cloth, and have, I have no doubt, turned an honest (?) penny by the transaction. Now I look upon this as a regular "do," and were the matter worth it I would resist *vi et armis*. I should add that the card is a most trumpery affair, the gilding very faint and rapidly vanishing away. Might it not be well to ask the Bromley Committee whether they would object to receiving them back, and wear them whenever they meet for consultation? It might be regarded as a delicate compliment paid by the exhibitors.—D., Deal.

CLAIM FOR SHOOTING A PIGEON.—Blackburn County Court, before W. A. Hulton, Esq., Judge. *Fish v. Bury*.—The plaintiff sought to recover the sum of £10 for a Pigeon. The plaintiff said about four years ago he bought a Pigeon, and gave £5 for it. It was a Black Dragoon. It was the best Pigeon in Darwen for flying matches. He had won about £100 in matches since he had it. On the 19th of January it was matched to fly for £15 a side. He had paid £1 for training it for the match. He had also paid £4 as a deposit. He had lost that money in consequence of the Pigeon not flying. He had been offered £10 several times for it, and would not take it. J. Howarth said that he was requested to watch which way the Pigeon flew. He went to the top of a hill near at hand, and he saw the defendant shoot the Pigeon, and he then waved his hand, and his dog brought the bird to him. Witnesses gave evidence to show that the bird was worth £10, that it had cost over £25 in training, that it had flown over one hundred matches during the last four years, and that it had beaten every Pigeon in Darwen, and had flown matches at Bolton, Horridge, Bury, and other places. His Honour gave a verdict for the plaintiff for the full amount.

COCHIN-SPANISH HEN.—It is a first cross between a Cochin and Black Spanish. She commenced to lay on December 24th, and, with few exceptions, has laid a larger than an average-sized egg every morning. On Friday morning (February 13th) she laid an egg measuring 8 inches longitudinally, 6½ inches in circumference, and weighing 4½ ozs., and has laid every morning since up to the time of writing (February 16th). She is also an excellent sitter and mother, having brought up two broods of

Game Bantams last season. If any of my brother fanciers wish for a cross for the above purposes, I can strongly recommend this.—LANCASHIRE BLACK RED.

## WALSALL POULTRY AND PIGEON SHOW.

This year the entries for poultry were somewhat less numerous than those of last season; but as the competition in the Pigeon classes had increased by about forty pens, and the entry of Rabbits was a large one, the Show on the whole was not only as complete in numbers, but unquestionably superior in general excellence to those preceding it.

The greatest falling-off was in the *Dorkings*, both classes being open to all colours (though none but Dark-coloured competed); and here we regretted to find that diseased feet were very frequent, and one of the best-looking hens at first sight was, when handled, an unquestionably wry-backed one. The condition of the *Dorkings* shown was also such as, with proper attention, might easily have been improved. The Buff *Cochins* mustered strongly and well for so late in the season; it is only very rarely that so good a collection can be brought together. The hens of this variety were especially good. The first-prize hen, a Clear Buff one, took also the silver cup, though, as remarked by a very old Cochins breeder, "it was a very tight fit between her and the first-prize White one." Partridge *Cochins* were good throughout large entries, whilst the excellence of the White rested almost entirely with the prizetakers. The Light *Brahmas* were a scanty and by no means superior lot, the three prize birds being the only cocks which were considered worthy of mention by the Judges; and strange to say, in the class appointed exclusively for Light *Brahma* hens only one entry was made, and even that pen was left empty! In the Dark *Brahma* classes capital specimens were general, though some of them evidently overtaxed by too frequent exhibition. The *Spanish* fowls were large classes and of superior quality, the cup-winner, a hen, being the best shown for some fifteen or twenty years past. In Black or Brown-breasted *Game* the latter variety took the lead, as is mostly the case at this season of the year, their excellent condition and purity of colour being a notable feature throughout strong classes. The *Duckings* were also good, as were the Red Piles. The *Hamburg* classes were of great merit throughout, and the consequence was, the prizes were very widely dispersed. It would be impossible to speak more highly than deserved of all the classes of *Hamburgs*. *French* fowls were very indifferently supported, the entries being both limited and most of the birds in the very reverse of show condition. Golden and Silver-spangled *Polands* were represented by some of the best birds in the kingdom. There were also some very excellent *Malays* shown, though somewhat too small. *Game Bantams* were remarkably good, and some of the Red Pile Bantams and Sebright Bantams are also deserving of especial notice. It is worthy of remark that several pens of thoroughly good White-booted Bantams were shown, and also a few first-rate pens of Black Bantams.

The arrangement for both varieties of *Ducks* (*Aylesbury* and *Rouens*) to compete together is not satisfactory—the *Rouens* at the Walsall Show carried the day. Whistling *Ducks* and East Indian *Ducks* took first and second prizes, but there was no entry in the variety *Duck* class for the third prize. The *Selling* classes were abundantly filled with good birds, the price ruling so low as to cause many immediate sales. The *Turkeys* were marvelously good throughout, and the majority of the *Geese* were very superior.

The Walsall Agricultural Hall is an excellent building for every purpose of a show; but if the Committee, who are most attentive and praiseworthy in their personal attention to everyone, could arrange another season the darker-feathered poultry in the upper tiers of pens, as the light is entirely from the roof, the general appearances of the Exhibition would be improved. One excellent feature is worthy of record—the catalogue with price list was ready almost at the time of opening to the public.

**DORKINGS**—Cock—Cap, J. Watta, King's Heath, Birmingham. 2, H. Feast, Swansea. 3, W. Bayliss, Walsall. Hen—1, J. Stott, Healey, Rochdale. 2, R. A. Davies, Burntwood. 3, W. Bayliss.

**COCHIN-CHINA** (Cinnamon or Buff)—Cock—1, H. Feast. 2, H. Yardley, Birmingham. 3, S. R. Harris, Cusgarne. Hen—Cap, J. Andrews, Worcester. 2, S. Sambrooke, Chipping Camoden. 3, J. Naah, Walsall. *hc*, S. Sambrooke; J. Cattell, Birmingham; H. Feast. *c*, R. Fowler, jun., Birmingham; T. Bloodworth, Cheltenham.

**COCHIN-CHINA** (Partridge)—Cock—1, T. Stretch, Ormskirk. 2, M. Cashmore, Sheepshed, Loughborough. 3, J. Stephens, Walsall. *hc*, J. Bassett, jun., Walsall; J. Stephens. Hen—1, T. Stretch. 2, T. Derry, Gledney. 3, J. Stephens, *hc*, M. Cashmore. *c*, Rev. R. Story, Lockington Vicarage, Derby; E. Kendrick, jun., Lichfield.

**COCHIN-CHINA** (White)—Cock—1, R. S. S. Woodgate, Pembury, Tonbridge Wells. 2 and 3, W. Bayliss. Hen—1, R. S. S. Woodgate. 2, H. Feast. 3, J. Bloodworth.

**BRAMA POOTRA** (Dark)—Cock—1, J. Bloodworth. 2, J. H. Butler, Erdington. 3, Mrs. H. J. Bailey, Tenbury.

**BRAMA POOTRA** (Dark)—Cock—1, J. Watta. 2, R. P. Percival, Northendon. 3, E. Sharratt, Rugeley. *hc*, E. Pritchard, Tettenhall; R. P. Percival. Hen—Cap, J. Watta. 2, E. Kendrick, jun. 3, E. Pritchard. *hc*, E. Kendrick, jun.; R. P. Percival. *c*, E. R. Percival.

**SPANISH**—Cock—1, J. James, Peckham Rye. 2, E. Jackson, Finchfield, Wolverhampton. 3, J. H. Baby, Great Witley. *hc*, Cooper & Nash, Walsall. Hen—Cap, T. Moore. 2, Mrs. Tonkin, Bristol. 3, Cooper & Nash. *hc*, F. James.

*c*, J. Aldridge, jao., Walsall; Mrs. F. Alsopp, Hindlip Hall, Worcester; Mrs. E. Wilkinson, Greenhays, Macclesfield; H. Feast.

**GAME** (Black or Brown-breasted Red)—Cock—Cap, J. Palmer, Wednesbury. 2, Miss Osborne, Yarnton. 3, T. Mason. *hc*, G. Burnell, Rugeley; J. Palmer. *c*, H. Horton, Colwall, Malvern; W. E. Oakley, Atherstone (2); J. Andrews. Hen—1, Miss Osborn. 2, F. Sales, Crowle. 3, J. Palmer. *hc*, W. E. Oakley.

**GAME** (Any other colour)—Cock—1, J. Andrews. 2, F. Sales. 3, J. Palmer. Hen—1, J. Palmer. 2, E. Winwood, Worcester. 3, H. Feast.

**HAMBURGERS** (Golden or Silver-spangled)—Cock—Cap, H. Beldon, Gettsbuck. 2, T. Apden, Church. 3, J. Boulton, Handford, Stoke-on-Trent. *hc*, H. Feast; M. Cashmore. Hen—1, J. Clarke, St. Day. 2, H. C. White, Maney, Sutton Coldfield. 3, T. Blakeman, Tettenhall. *hc*, S. Heap, Walsall; T. Boulton; T. Apden. *c*, R. Davis, Penz; M. Cashmore.

**HAMBURGERS** (Gold or Silver-pencilled)—Cock—1, H. Beldon. 2, W. Speakman, Dodington Park, Nantwich. 3, T. Apden. Hen—1, H. C. White. 2, H. Feast. 3, M. Cashmore. *hc*, J. Rhodes, Hydnarb, Accrington; H. Beldon; T. Apden; M. Cashmore.

**FRENCH** (Any variety)—Cock—1, Rev. N. J. Ridley, Newbury. 2 and 3, H. Feast. *hc*, J. B. Ellis, Leicester. Hen—1 and 2, H. Feast.

**ANY OTHER VARIETY**—Cock—Cap, H. Beldon. 2, Rev. N. J. Ridley. 3, M. Cashmore. *hc*, H. Maskery, Leek; H. Feast. Hen—1, H. Beldon. 2, H. Feast. 3, M. Cashmore.

**GAME BANTAMS** (Black or Brown-breasted Red)—Cap, J. Andrews. 2 and 3, W. Adams, Ipswich. *hc*, G. E. Small, Barton-on-Umber. **GAME** (Any other variety)—1, T. Barnett. 2 and 3, F. Shumach, Southwell. *hc*, J. Andrews.

**BANTAMS** (Not Game, any variety)—1 and 2, R. H. Ashton, Mottram. 3, H. Yardley, Birmingham. *hc*, T. Holbrook, Derby; J. Watta, Birmingham (2); R. H. Ashton.

**DUCKS** (*Aylesbury* or *Rouen*)—1 and 3, E. Kendrick, jun. 2, R. Beckett, Hartford. *hc*, W. H. Houghton, Dudley. *c*, H. Yardley. 2, E. Kendrick, jun.

**DUCKS** (Any other variety)—1, H. Yardley. 2, E. Kendrick, jun. 3, R. Beckett. *hc*, Rev. N. J. Ridley; J. Watta; W. Coath, Walsall.

**GEESSE**—1, Mrs. H. J. Bailey. 2, R. Beckett. 3, W. Cookson, Oswestry.

**SELLING CLASS**—Cock—1, Cooper & Nash. 2, W. Smart, Walsall. 3, J. Watta. *hc*, W. Tadd, Erdington (Light *Brahma*); Mrs. H. Shutt, Steurbridge (White *Cochin*); T. Blakeman, Tettenhall (Golden-spangled *Hamburg*); J. B. Webb, Walsall; R. H. Ashton. *c*, M. H. Shutt (White *Cochin*); H. C. White (White *Cochin*); T. A. Dean, Marden (2); J. Andrews; J. Moss (Spanish); M. Cashmore.

**SELLING CLASS**—Hens—1, W. Smart. 2, J. Stephens (Spanish). 3, J. Aldridge, jun. (Black Spanish). *hc*, J. Watta; Mrs. E. Alsopp. *c*, W. Tadd (White *Cochin*); E. J. Webb, Admaston (Light *Brahma*); Cooper & Nash (Spanish).

**SELLING CLASS**—1, Cooper & Nash. 2, T. A. Dean. 3, J. Nash.

## PIGEONS.

**POUTERS**—Cock—1 and 2, H. Pratt, Knowle. *hc*, E. Beckwith, Monkwearmouth. *c*, Mrs. Ladd, Calne. Hen—1, H. Pratt. 2, H. Yardley. *hc*, Mrs. Ladd. *c*, E. Beckwith.

**CARRIERS**—Cock—1, H. Yardley. 2, J. E. Spence, Broughty Ferry. *hc*, S. A. Cooper, Walsall. *c*, H. Beebe, Walsall. Hen—1, H. Yardley. 2, E. Beckwith. *c*, S. A. Cooper.

**BARS**—Cock or Hen—1, J. W. Townson, Bowdon. 2 and *hc*, H. Yardley.

**TUMBLERS**—Cock or Hen—Cup and *hc*, H. Yardley. 2, E. Beckwith.

**OWLS** (English)—Cock or Hen—1, S. A. Cooper. 2, J. W. Edge. *hc*, J. W. Townson. *hc*, S. A. Cooper; J. Watta. *c*, W. Tadd.

**TURKISH**—Cock or Hen—Cup, 2, and *c*, W. Croft, Killinghall, Ripley. *hc*, A. Riddell, Lichfield; E. C. Stretch, Ormskirk.

**JACOBIANS**—Cock or Hen—1, Rev. A. G. Brooke, Shrawardine. 2, H. Yardley.

**DRAGONS**—Cock or Hen—1 and 2, H. Yardley. *hc*, S. Walker, Walsall.

**ANTWERPS**—Cock or Hen—1, T. Clulce, Birmingham. 2, J. Watta. *hc*, S. Adderly, Walsall; T. Clulce. *c*, S. Mills.

**FANTAILS**—Cock or Hen—1, W. H. Tomlinson, Newark. 2, J. F. Loversidge, Newark. *hc*, W. H. Tomlinson; H. Yardley.

**NUSS**—Cock or Hen—1 and 2, Rev. A. G. Brooke. *hc*, H. Yardley; W. Croft.

**ANY OTHER VARIETY**—Cock or Hen—1, J. W. Townson. 2, 3, and *hc*, H. Yardley. *hc*, S. Amphlett, Walsall (Archangel). *c*, A. Silvester.

**WORKING OR HOMING**—Cock or Hen—1, D. Nash, Walsall. 2, H. Yardley. 3, H. Myring, Walsall. *hc*, C. F. England, Stroud. *c*, E. C. Stretch.

**SELLING CLASSES**—*Pouters* or *Carriers*—Cock or Hen—1, 3, and *hc*, H. Yardley. 2, H. Beebe, Walsall. *hc*, J. Watta. *c*, Mrs. Ladd. *Any other variety*—1, 3, and *hc*, H. Yardley. 2, J. Watta. *hc*, C. N. Lythe, Cottingham, Hull; J. Nash. *c*, W. H. Miller, Walsall.

**RABBIT**—Length of Ear—Cup and 2, F. Banks, Deaghty Street, London. 3, T. Green, Moxley. *hc*, F. Braco. *Any variety*—All Properties—1 and 2, F. Banks (Lop-eared). 3, T. Garner, Kingsthorpe (White Angora). *hc*, T. Green (Blue); C. King, St. John's Wood. *Selling Class*—1, J. Bowman, York (Lop-eared Himalayan). 2, J. Bacon (Himalayan). 3, M. Cashmore. *hc*, A. W. Whitehouse, Northampton (Silver-Grey); J. Hallas, Huddersfield; J. Slater.

**JUDGES**—*Poultry*: Mr. E. Hewitt, Birmingham; Mr. J. Martin, Worcester. *Pigeons*: Mr. J. Siddons, Aston; Mr. H. Alsopp, Birmingham. *Rabbits*: Mr. H. Yardley, Birmingham.

## KETTERING POULTRY SHOW.

AFTER a discontinuance of five or six years the Kettering Poultry Show is again a candidate for public favour, and certainly, if well-considered arrangements coupled with careful personal superintendence deserve success, it was here merited, and, we are glad to say, attained. The Exchange was very tastefully decorated, the pens being supplied by Billett, and a more thoroughly orderly Show could not have been devised. A *Dorking* cup for any variety was awarded to Mr. Lingwood's well-known pen of Greys, the Whites being also a remarkably good class. A general competition for a cup, open to any breed of either *Cochins* or *Brahmas*, brought forward a very strong competition; a really well-shown pen of Buffs proving the winners. The *Game* classes were full of excellent specimens, Mr. Julian taking precedence with the highest-conditioned specimens we have seen for a long time past, both of *Duckings* and *Brown Reds*. As regards the *Spanish* fowls, the entry was fair in numbers, and this, combined with unusually good quality and really low prices, gave easy opportunity to persons desirous of possessing this aristocratic breed of poultry. One entry alone was made for *French* fowls, though an especial class was appointed them. Some very meritorious Spangled *Hamburgs* were entered, and a few good Black and Gold-pencilled, but not a single pen of Silver-pencilled were competing. Some very neat Black Red *Game Bantams*, Silver-laced, and both Black and White Bantams proved not the least interesting portion

of the Show. At any local meeting it is difficult to find *Turkeys* and *Geese* of equal merit to those entered at Kettering; but it should be borne in mind that mixed colours in the Geese constituting a show pen are not allowable, however otherwise as individual birds they may be praiseworthy.

The weather proved favourable. The Committees were most desirous to please everyone, and the visitors were quite as numerous as could be expected.

Though the *Pigeons* were limited in number, as might be expected from the season being advanced, the classes of *Pouters* and *Carriers* were exceptionally good. A local exhibitor, Mr. Martin, took the cup with a beautiful White hen in excellent condition and show, and a first prize with his White cock, closely followed by an excellent Blue-pied. In *Carrier* cocks Blacka were first and second. In hens the first prize went to an excellent Black. A very good pair of *Archangels* in the *Variety* class won a cup.

**DORKINGS.**—Any variety except *White*.—Cup, Henry Lingwood, Barking, Needham Market. 2, F. Parlett, Great Baddow. 3, E. W. Southwood, Fakenham. *hc*, A. S. Clarke, Lowestoft; T. E. Olham, Loddington Hall, Kettering; J. Holme, Loddington. *White*.—1, Rev. F. Tearle, Gazeley Vicarage. 2, J. Robinson, Garsham. 3, Miss A. Bayes, Kettering.

**COCHINS.**—*Cinnamon or Buff*.—Cup, Mrs. E. Allsopp, Hindlip Hall, Worcester. 2, T. Rogers. 3, H. Lingwood. *hc*, D. Young, Leamington; H. J. Ginnell, Milton; J. Bloodworth, Cheltenham; J. Staley, North Cottingham, Newark. *Any other variety*.—1, Mrs. E. Fryor, Welwyn. 2, T. M. Derry, Gedney. 3, P. Passmore, Northampton.

**BRAHMAS.**—*Light*.—1, Horace Lingwood, Creeping, Needham Market. 2, J. Bloodworth, Cheltenham. 3, A. F. Faulner, Thrapstone. *Dark*.—1, Horace Lingwood. 2, W. R. Garner, Dyke, Bourne. 3, J. Watte, King's Heath, Birmingham. *hc*, H. W. Castle, Kensington; H. Goddard, Hertford Road, London, N.; J. S. Clarke. Mrs. E. Fryor.

**GAME.**—*Black or Brown Red*.—1, H. M. Julian, Hull. 2, T. Hancock, Northampton. 3, R. Hall. *hc*, B. Cox, Moulton; E. Winwood, Worcester. *Any other variety*.—1, H. M. Julian. 2, B. Cox. 3, O. Barusdall, Newark.

**HAMBURGS.**—*Gold or Silver-spangled*.—1, J. Ward, Bardon Hill, Ashby-de-la-Zouche. 2, J. Robinson. 3, F. L. King, Kettering. *Gold or Silver-pencilled*.—1, J. Robinson. 2, C. J. N. Row, Melford. 3, T. Wild, jun., Melton Mowbray. *hc*, E. Robinson, Kettering.

**FRENCH.**—1, J. Robinson. (No competition.)

**SPANISH.**—1, T. Boulter, Spencey Street, Clerkenwell, London. 2, J. F. Parker, Northampton. 3, Mrs. E. Allsopp. *hc*, T. Rogers. 3, S. W. Hallam. *ANY OTHER VARIETY*.—1, J. Robinson. 2, A. Silvester (Golden Poland). 3, J. Foster, Kettering (Black). 3, J. Foster, Kettering (Golden). 3, J. Foster, Kettering (Poland); Miss Blencowe, Kettering (Langshans); J. Foster (Black Hamburg); Miss Vernon, Kettering (Golden Poland); Rev. N. J. Ridley, Newbury (Malaya).

**BANTAMS.**—*Game*.—1 and 3, Capt. Wetherall, Loddington. 2, T. W. Anna, Clapham. *hc*, Capt. Wetherall; D. Warren, Syston. *c*, M. Leno, Markyate Street. *Any other variety*.—1, M. Leno. 2, R. H. Ashton, Mottram. 3, Rev. F. Tearle. *c*, J. Wallis.

**SELLING CLASSES.**—*Cock or Cockerel*.—1, J. S. Clarke, Oundle (Dark Brahma). 2, T. Rogers, Walsall. 3, J. F. Parker (Spanish). *hc*, Miss A. Bayes (White Dorking). *c*, H. Bolle, Kingsland, London (Light Brahma); Miss C. E. Palmer, Odham (Golden-spangled Hamburgs). *Hens or Pullets*.—1, T. Rogers. 2, Miss Vernon (Partridge Cochins). 3, T. Barnaby (Dorking). *hc*, W. Nottage, Northampton (Spanish); W. E. Cave, Market Harborough (Buff Cochins); Mrs. E. Allsopp. *c*, G. F. Bentley, Linton (White Cochins); R. Sykes, Geddington (Dorking); B. Cox (Spanish); S. Horn, Kettering; A. F. Faulner, Thrapstone (Golden-pencilled Hamburgs); W. Birch, Barnack, Coventry (Brahma); P. Passmore (White Cochins).

**SELLING CLASSES.**—*Drake*.—1, T. Barnaby, Kettering (Ronen). 2, T. Plumb, Northampton (Aylesbury). 3, J. Harvey, jun., Thannington (Ronen). *Ducks*.—1, C. Richards, Glendon, Kettering. 2, M. Leno. 3, Sir J. B. Robinson, Kettering.

**DUCK.**—*Rouen*.—Cup, F. Parlett. 2, T. Barnaby. 3, M. E. Jones, Wellingborough. *hc*, J. Harvey, jun. *Aylesbury*.—1, J. J. Sharp, Broughton, Kettering. 2, T. Plumb. 3, H. Wynan, Stilton. *hc*, H. J. Ginnell.

**TURKEYS.**—1 and 3, H. J. Ginnell. 2, M. Kew, Market Overton. *hc*, Rev. N. J. Ridley; C. Richards.

**GESE.**—1, M. Kew. 2, H. Wyman. 3, J. Sheffield, Geddington Grange, Kettering.

#### PIGEONS.

**CARRIERS.**—*Cock*.—1, H. Yardley, Birmingham. 2 and 3, W. Minson, St. Ives. *hc*, E. Beckwith, Bouverfield, Sunderland; T. Chambers, jun., Northampton. *Hen*.—1, W. Minson. 2 and 3, E. Walker.

**POUTERS.**—*Cock*.—1, C. Martin, Kettering. 2, N. Hill, Ealing. 3, L. Watkin. *hc*, C. Martin; L. Watkin, Northampton; W. Stiles, Rushton, Kettering. *Hen*.—Cup, C. Martin. 2, N. Hill. 3, E. Beckwith.

**TUMBLERS.**—*Almond*.—*Cock or Hen*.—1, H. Yardley. 2, G. Packham, Exeter. 3, E. Beckwith. *Any other variety*.—*Cock or Hen*.—1, H. Yardley. 2, E. Beckwith. 3, J. Fielding, jun., Rochdale. *hc*, H. Yardley; J. E. Spence, Broughty Ferry.

**BARBS.**—1, H. Yardley. 2, F. Wild, Hyde, Manchester. 3, W. Larkins, Henlow, Biggleswade.

**JACOBINS.**—1, T. W. Swallow, Northampton. 2, T. Homes. 3 and *hc*, C. Martin.

**DRACOONS.**—1, W. Smith, Walton, Liverpool. 2, W. H. A. Miller, Walsall. 3, W. Stiles, Leamington. *hc*, W. Smith; W. Larkins. D. Young.

**FANTAILS.**—1, H. Yardley. 2, J. E. Spence. 3, S. Horn, Kettering.

**TURBITS.**—1 and 2, C. A. Crafer, Wallington. 3, C. Martin.

**ANTWERPS.**—*Short-faced*.—1, C. F. Copeman, Coft Heath, Solihull. 2, H. Yardley. 3, W. B. Bull. *Homing*.—1, R. Hall, Cambridge.

**ANY OTHER VARIETY.**—Cup, H. W. Webb, Lower Sydenham (Archangels). 2, A. Silvester. 3, H. Yardley.

**SELLING CLASSES.**—*Pair or Single*.—1, W. Nottage (Carrier). 2, G. J. Lenny, Lewes (Black Barbs). 3, W. Stiles (Dun Carrier). *hc*, Master S. Vernon, Grafton Vicarage, Kettering (Speckled Jacobins); G. Packham (Priests); W. H. A. Miller (Carrier); H. Yardley; W. Nottage; G. J. Lenny (Dun Carriers and Grizzled Dracoons).

#### RABBITS.

**LOP-EARED.**—1, F. Banks, Doughty Street, London. 2, F. Purser, Bedford. 3, A. Ashmead, Northampton.

**ANY OTHER VARIETY.**—1, J. Martin (Angora). 2, J. Tebbutt (Patagonian). 3, F. Purser (Silver-Grey). *hc*, G. Johnson; J. Martin (Angora); G. Foster, Northampton (Dutch).

**SELLING CLASSES.**—1, F. Banks. 2, J. Hallas, Huddersfield. 3, G. Johnson.

The Judge for poultry was Mr. E. Hewitt, of Sparkbrook, near Birmingham; and the prizes for both Rabbits and Pigeons were awarded by Mr. F. Eaquant, of Brixton, London.

been decided. A butcher and a beehouse-keeper were fined 15s., inclusive of costs, for ill-treatment, which consisted in tying the birds by the legs in pairs, suspending them for sale, and carrying them in that position for about half a mile. The birds, when examined by the inspector of the Society for the Prevention of Cruelty to Animals, were half dead. The magistrates considered it a case of gross cruelty, and would have committed the defendants were they of opinion that the offence was knowingly committed.—(*Land and Water*.)

#### NANTWICH POULTRY SHOW.

The fourteenth annual Show was held in the Town Hall, on the 6th and 7th inst. The entries were numerous, amounting to upwards of three hundred. The following awards were made:—

**SELLING CLASS.**—1, J. Powrall, Newton Hall. 2, C. W. Laxton, Nantwich. 3, J. Platt, Swanlow. *hc*, W. Church, Nantwich.

**SPANISH.**—1, Mrs. Allsopp, Worcester. 2, S. L. Edwards, Tarporley.

**TURKEYS.**—1, Mrs. Cushe, Darnhall. 2, R. Beckett, Hartford. *hc*, Miss E. Gibbs, Worleston; R. Macalister, Wenlock.

**GESE.**—1, R. Beckett, Hartford.

**DUCKS.**—*Aylesbury*.—1, R. Beckett, Hartford. *Ducks*.—1, W. Evans, Prescott. 2, J. Platt, Swanlow. *Various*.—1, T. Rigby, Darnhall.

**GAME BANTAMS.**—*Brown Red*.—1, J. K. Fletcher, Stoneclough. 2, A. Ashley, Worcester. 3, J. Platt, Swanlow. *Other than Black or Brown Red*.—1, J. K. Fletcher. 2, J. Platt, Swanlow. *hc*, A. Ashley. *Black-breasted Red*.—1 and 3, Miss Baskerville, Sandbach. 2, A. Ashley, Worcester. *hc*, A. H. Jones, Liverpool.

**BANTAMS.**—*Not Game*.—1, A. Ashley. 2, A. Smith, Halifax.

**DORKINGS.**—1, S. Kitchen, Warrington. 2, T. Rigby, Darnhall.

**COCHIN-CHINA.**—*Partridge*.—Society's Cup, T. Stretch, Ormskirk. 2, E. Tadman, Whitchurch. *Other than Partridge*.—1, A. Bamford, Middleton. 2, Mrs. Allsopp. 3, T. Rigby, Darnhall Mill.

**FRAMES.**—1, Bamford. 2, G. Lightburn, Crewe. 3, G. Watson, Liverpool.

**GAME.**—*Cockers*.—Cup, J. Chesters, Nantwich. 2, T. Whittingham, Batherton. 3, T. Burgess, Burleydam. *hc*, R. Ashley, Nantwich; S. Joinson, Nantwich. *Cocks*.—Cup, C. W. Laxton, Nantwich. 2, W. Galley, Nantwich. 3, A. Robinson, Wrenbury Grange. *hc*, J. Chesters, Nantwich. *Hen or Pullet*.—1, J. Chesters. 2, P. Hinde, Little Budworth. 3, R. Sadler, Wrenbury.

**GAME.**—*Black-breasted Red*.—1, W. Sumner, Winsford. 2, R. Ashley, Cheshire. 3, R. Ashley. 2, E. Aykroyd, Ecclesfield. 3, W. Manning, Hatherton.

**GAME.**—*Brown-breasted Red*.—1, J. Pedley, Nantwich. 2, E. Prince, Nantwich. 3, W. Miller, Wyburnby. *Chickens*.—1 and 2, T. Burgess, Burleydam. 3, R. Ashley. *hc*, G. C. Barnett, Birkenhead.

**GAME.**—*Other than Black or Brown Red*.—1, W. Ryecroft, jun., Acton. 2, T. Hassall & Co., Adderley. 3, J. Wilkinson, Norbury. *hc*, W. Church, Nantwich.

**POLANDS.**—1 and *hc*, W. E. Little, Chester.

**ANY OTHER VARIETY.**—1, J. Powrall, Newton Hall (Crève-Coeur). 2, R. Hage, Winsford (Black Hamburgs). 3, Mrs. Cunliffe, Darnhall (Hondas).

**HAMBURGS.**—*Pencilled*.—1, H. Smith, Newton, Hyde. 2, Mrs. Flynn, Church Lawton. 3, T. B. Lowe, Chester. *Spangled*.—1, Mrs. Flynn. 2, J. B. Manley, Middlewich. *hc*, E. Roberts, Swanlow Bridge.

#### PIGEONS.

**CARRIERS.**—1, H. Yardley, Birmingham. *hc*, J. Chesters, Nantwich.

**DRACOONS.**—1 and 3, S. Cliff, Nantwich. 2, J. Chesters. *hc*, G. W. Dutton, Chester.

**POUTERS.**—1, H. Yardley.

**BARBS.**—1 and 2, J. Chesters. *hc*, F. Wild, Hyde.

**TUMBLERS.**—*Short-faced*.—1, H. Yardley. 2, G. W. Dutton. *Long-faced*.—1 and 3, H. Ruseoe, Nantwich. 2, H. Yardley.

**FANTAILS.**—1, G. F. Lovelands, Newark.

**JACOBINS.**—1, H. Yardley. 2, Master W. G. Forster, Shrewbridge.

**OWLS.**—*English*.—1, A. Smith, Halifax. 2, E. Lee, Nantwich.

**TURBETS.**—1, H. Yardley. *hc*, W. T. Massie, Nantwich.

**TURBITS.**—1, G. Cudde, Sheffield. *hc*, H. Yardley.

**ANY OTHER VARIETY.**—1, G. Cudde (Foreign Owl). 2, T. Gamon, Nantwich (Runt). *hc*, H. Yardley; R. P. Earwaker, Alderley.

**DOVES.**—1, Mrs. J. Hockenbuhl. 2, Master A. Hockenbuhl.

#### SPALDING COLUMBARIAN SOCIETY'S SHOW.

This was held on the 19th, when the annexed awards were made:—

**POUTERS.**—*Blue*.—*Cock*.—1 and 2, H. B. Massey. *Hen*.—1, H. B. Massey. 2, W. Andrew. *Red*.—*Cock*.—1, H. Simpson. *Any other colour*.—*Hen*.—1, H. Simpson. 2, T. H. Dowe.

**CARRIERS.**—*Black*.—*Cock*.—1 and 3, W. Bulmer. 2 and *hc*, W. Massey. *Hen*. 1, 2, and 3, W. Bulmer. *c*, H. Simpson. *Dun*.—*Cock*.—1, W. Bulmer. 2, W. Massey. *Hen*.—1, W. Massey. 2, W. Bulmer. *Any other colour*.—*Cock*.—1, W. Massey. 2, H. B. Massey.

**BARBS.**—*Black or Dun*.—*Cock*.—1, 2, and *hc*, W. Massey. 3, H. B. Massey. *Hen*.—1, 2, and 3, W. Massey. *hc*, H. B. Massey. *Red*.—*Cock*.—1, W. Massey. 2, C. G. Cave. *Hen*.—1, W. Massey. *Any other colour*.—*Cock*.—1, H. B. Massey. *Hen*.—1, H. B. Massey.

**DRACOONS.**—*Blue*.—*Cock or Hen*.—1 and 2, H. B. Massey. *Any other colour*.—1, W. Bulmer.

**ANTWERPS.**—*Homing*.—1, 2, and 3, G. Shadford.

**TUMBLERS.**—*Almond*.—1, T. H. Dowe. *Any other colour*.—1, T. H. Dowe. *Short-faced Beards*.—1, Extra, 2, and 3, W. Woodhouse. *Short-faced Baldheads*.—1, 2, and 3, W. Woodhouse.

**FANTAILS.**—1, Extra, 2, 3, and *c*, H. Simpson.

**OWLS.**—*English*.—1 and 3, W. Woodhouse. 2, H. B. Massey. *c*, H. Simpson; W. Woodhouse.

**TURBITS.**—1, T. H. Dowe.

**JACOBINS.**—*Red*.—1, W. Woodhouse. 2, H. Simpson.

**TURBETS.**—Prize, H. Simpson.

**RUNTS.**—1, T. H. Dowe. 2 and 3, W. Woodhouse.

**ANY OTHER VARIETY.**—1, T. H. Dowe. 2 and 3, H. Simpson.

#### BIRDS BRED IN 1873

**POUTERS.**—*Blue*.—1, Extra, 2, and 3, H. B. Massey. *White*.—1, Extra, 2, and 3, H. Simpson. *Red*.—1, W. Andrew. *Yellow*.—1, W. Andrew.

**CARRIERS.**—*Black*.—1, Extra, 2, and 3, W. Massey. 3 and *hc*, W. Bulmer. *c*, H. A. Ayton. *Dun*.—1, Extra, 2, and 3, W. Bulmer. 3 and *c*, W. Massey. *Any other colour*.—1, W. Massey. 2, H. B. Massey.

**BARBS.**—*Black or Dun*.—1, Extra, and 3, W. Massey. 2, H. B. Massey. *Red*.—1, Extra, and 2, C. G. Cave. 3, H. B. Massey. *Any other colour*.—1 and Extra. C. G. Cave.

**SELLING CLASSES.**—*Single*.—1, W. Massey. 2, H. B. Massey. 3, H. A. Ayton. *Pair*.—1, W. Massey. 2, H. B. Massey. 3, *hc*, and *c*, H. Simpson.

#### RABBITS.

**LOP-EARED.**—*Buck*.—1, A. C. Wiseman. *Doc*.—1, A. C. Wiseman. 2, R. Buffham.

IMPORTANT TO FOWL DEALERS.—At the petty sessions at Peterborough, a case of some importance to fowl dealers has

BELGIAN HARE.—*Buck*.—1, A. C. Wiseman. 2, H. B. Massey. *Doc*.—1, T. H. Dows. 2, R. Buffham.  
 SILVER-GRAY.—1 and 3, E. Brummitt. 2, R. Buffham. *hc*, E. S. Smith.  
 HIMALAYAN.—1, E. S. Smith. 2, E. Brummitt.  
 HEAVIEST.—1, R. Buffham. 2, E. Brummitt. 3, E. S. Smith.  
 JUDGES.—*Pigeons*: Mr. P. H. Jones, Ranelagh Lodge, Fulham.  
*Rabbits*: Mr. J. W. Harrison, Spalding.

### THE RABBIT FEVER.

WE are indebted to Mr. S. B. Pike, of San Francisco, California, for the information which we give in the extract which follows:—

"It may or may not be news to the fanciers on your side of the Continent to know that the Japanese have the Rabbit fever to that extent the chicken fever seems tame in comparison. Every steamer which has left this port for Japan for some weeks past has taken from 500 to 1000 head, which have sold there for all sorts of prices. I have the word of the first officer of the steamer "Great Republic," that he saw twelve hundred (\$1200) Mexican dollars counted down upon the ship's deck for one Rabbit! How is that for high?"—(*Pet-Stock Bulletin*.)

CAYENNE CANARIES.—A great deal of fuss has been made lately about peppering Canaries. The fanciers do not seem aware that in countries where cayenne grows out of doors the difficulty is to prevent the birds destroying the pods. I cannot see anything improper in indulging them in their natural taste. —F. C. HASSARD, *Sheerness*.

### THE COMMENCEMENT OF THE BEE SEASON.

AMID the discouragements and disasters of the past almost unparalleled unpropitious bee season, which are not yet fully felt and realised in all their magnitude, nor will be for some weeks to come, it is cheering to recognise in some of the writers in the Journal that indomitable courage and perseverance in following out the favourite pursuit, that not even the sad experiences of 1873 are sufficient to damp their ardour or cool their love. The apiarian motto must evidently be "*Nil desperandum*." Bad seasons, like good ones, often run in a series consecutively, so that we may now reasonably hope that after so many bad and indifferent bee seasons we shall be on the verge of a glorious future which shall change the whole aspect of affairs—a future pregnant with grand results, and in which our little favourites can, from the pure and unadulterated founts of nectar so richly supplied by Nature in her choicest flowers, fill our "crystal palaces" unaided by any of those devices which have so recently in these pages, for the honour of English apiculturists, been so justly condemned. Such at least are our hopes.

"Cease every joy to glimmer on my mind,  
 But leave, oh! leave the light of hope behind.  
 What though my winged hours of bliss have been,  
 Like angel-visits, few and far between,  
 Her musing mood shall every pang appease,  
 And charm when pleasures lose their power to please."

But, to pass from poetry to prose, many who would not be attracted by mere sentimentality on the subject will be instinctively drawn by the hopes held forth by your indefatigable correspondent, Mr. Pettigrew, who, as mounted upon the "paddle-box to pilot (as he says) the apiarian steamer for the next twelve months" in the Journal, holds up to view a £100 bank note (*a la* Gladstone with his financial budget before the nation) as his anticipated surplus profit in 1874, and therefore as an inducement to the apiarian crew to stand fast to their gear. I earnestly hope that Mr. Pettigrew will realise his heart's wishes, though we poor northerners would be content with comparatively smaller things.

It was on the 15th February that I observed the first pollen-laden bee enter one of my hives. On such occasions I always recall to mind good old Bonnar, who was one of the best practical apiarians of his day. "The first day in spring (he says) that I observe a bee carrying a load I generally call my family together, to take a glass and rejoice with me and my faithful servants at the return of the salutiferous season." The witnessing the first load certainly excites the keen apiarian, just as the first shot at the commencement of a battle excites the warrior. Such beginnings, small though they be, indicate that the season of repose is giving place to one of activity and industry, when great and combined efforts in the little community must be made to replenish their wasted stores and increase their diminished numbers; and for this and the ardour and perseverance of the little race is such, that not only is advantage taken of every favourable hour, but amid dangers and risks innumerable they hazard even life itself in the prosecution of their eager work. It will be remarked how different is the activity of the bee in early spring compared with that exhibited late in autumn when breeding is over. Pollen is the great object of search in spring in every well-conditioned hive, and a good criterion of its healthiness may always be formed by the number of pollen-

laden bees which enter it. This was a favourite test of Bonnar in deciding on the comparative value of any two hives, to count the number of pollen-laden bees that entered in a minute. This is a valuable hint to beginners in choosing a hive, especially when other conditions of age and weight are equal.

The past winter, being so mild and open, has told heavily upon the stores. I do not think I ever noticed such consumption. In an ordinary winter not more than from 7 to 10 lbs. are usually consumed, say from the beginning of October to the middle of March, but this winter the average month's consumption is much exceeded, so that some of my weaker hives are even now at starvation point. I fear, therefore, from the state of hives generally in the autumn, many will succumb to famine unless carefully examined and timely attended to.

For spring I recommend top-feeding for hives weak in bees, the bottle being chiefly used, or a piece of honeycomb placed on the opening at the top, and protected with any small super, in both cases to be closely wrapped with woollens and other appropriate coverings. This brings the food into close proximity to the bees, which in ungenial or cold weather is indispensable. In supplying populous hives with food I discard the bottle as the more troublesome method, and use for spring shallow zinc circular vessels of suitable size, with a central entrance tube, surrounded by a perforated wooden float, and all covered with a lid. For warmth cover over also with woollens, &c.

I cannot approve of careless feeding of any kind, and more especially of the practice of pouring the liquid food over the combs. This is objectionable in two ways: It encourages robbers, and is injurious to the hive itself. Bees, as a rule, dislike wetted dripping combs, and when so supplied largely, as is sometimes recommended, the bees are often dislodged from the "brood nest," and this is highly prejudicial to prosperity. Neither should bees be fed at the entrance-door by the use of a trough or otherwise, unless at night, as it may entice robbers. When adopting under-feeding at all I prefer inserting a trough laterally in a receptacle purposely scooped out in the floor board, away from the doorway altogether. This trough when not used is permanently placed in the floor board reversed. In spring every precaution must be adopted to prevent pilfering and attacks by robber bees. Careless feeding must be especially guarded against, and in all cases of annoyance by stranger bees no time should be lost in narrowing the doorway to the smallest possible dimensions.

I cannot close these remarks without cautioning beginners in bee-keeping against shifting their hives at this season of the year from one part of the garden to another. Mr. Pettigrew will excuse me if I doubt that his experience in this matter justifies the opinion he expressed under date 5th February, when he says that hives may at this season "be removed from one side of a garden to another with safety." Mr. Pettigrew must know that an opinion so expressed from the "paddle-box" is tantamount to a recommendation, and may lead some of the less experienced "crew" to adopt it. I have only to say that in all cases and circumstances such removals are to be condemned, and more especially at this inclement season. Many bees in every case are sure to be lost, and possibly even the hives themselves permanently damaged. We all know how invaluable even a few bees are at this early season, and therefore, as a rule, I strongly advise never to shift the site of a hive to a short distance. At all times, I repeat, it is bad practice, and at this season especially it is sure to be productive of disappointment and loss.—J. Lowe.

### FOUL BROOD IN HIVES.

(Concluded from page 177.)

I SEE, by the proposed schedule of prizes to be offered for competition at the Crystal Palace exhibition of hives, that £5 will be offered for the best essay on the cause and cure of foul brood. As the schedule is presented subject to alteration, perhaps I may be excused for suggesting that the prize be offered for the best essay on the cause and prevention of foul brood, for certainly there is no cure for it. We might as easily cure rotten eggs.

Frequently brood in this changeable climate is chilled to death and becomes foul. In spring and early in summer bees sit loosely over their combs, and spread their brood as widely as they can. A sudden change from heat to cold may cause the bees to creep more closely together, and thus expose some parts of the brood comb to the chilling influence of cold weather, and prevent the bees from properly attending to the brood. The cause here is not hidden. About eight years ago I went to Scotland in September, leaving three hives without sufficient food for the winter. When I returned I omitted to feed these hives till November. When I fed them the weather was open and warm, and the queens began to lay. In about ten days afterwards a severe frost set in and killed the brood. The bees were allowed to remain in these hives till the following March. The reader should, however, know that in nine cases out of ten foul brood is produced, not by chills, but by other causes not

well understood; indeed, foul brood is oftener found in hives that have been full and apparently long on the point of swarming than in hives not so well filled. Hives managed on the non-swarming system are more frequently afflicted with this incurable malady than those managed on the swarming system.

Let me repeat that dogmatic teaching on the cause of foul brood should not be attempted or expected. We are still ignorant as to the immediate cause of the Potato disease, and the cause of foul brood is equally beyond the ken of mortals.

A week or two ago one of our practical teachers in the poultry department of this paper told us that he kept sixteen hens, eight pullets, and eight a year older, and never kept any over two years old. This is the advice I would tender to bee-keepers. Let the half of your stocks of bees be from swarms, and seldom keep any beyond two years old. Thus you will not suffer much in your apiary from foul brood.—A. PETTIGREW, *Salcey, Cheshire*.

A NEW WEEKLY PAPER is announced for the special use and benefit of fanciers, or those who breed for exhibition any kind of pet birds or animals, such as dogs, poultry, Pigeons, birds, Rabbits, Cats, &c. It is to be called "The Fanciers' Gazette," and will be under the editorship of Mr. Lewis Wright, so widely known by his various writings on poultry.

### OUR LETTER BOX.

VARIOUS (I. N.).—We never feed our fowls on meat, beyond giving them the table scraps. We believe, wherever they have a good grass run they get enough of animal life for all useful or necessary purposes. We believe much mischief is done by overfeeding and by seeking out various foods. Excessive fat is not favourable to laying. If you mean to give meat, give it cooked. Raw meat induces cannibalistic habits. You may punish the Dorking cock as you would any other bird—by cutting off the flight of the wing, but it will probably answer the purpose if you cut the feathers.

ABRAHAM COCKEREL DYING SUDDENLY (Novice).—You have no remedy against the seller. The bird would not have been highly commended by the judges had he not seemed in perfect health. We have never known fowls die of heart disease. They die of rupture of vessels on the brain. Cocks are more subject to it than hens, and it is more frequent at this time of year than at any other. We should set the eggs, and expect them to hatch, but we cannot think why you did not get another cock before.

EGG-EATING HENS (Subscriber).—The best advice we can give you is to sell or kill the hen. She will not give up the habit while she is with you, and it is more than doubtful if she will at all. You should remove her at once, as the others will acquire the habit.

PARENTAGE OF EGGS (C. G. Anxious).—If no other cock have access to the hens, we believe the cock fertilises all the laying. If another cock is admitted, it is then an undecided point how soon he may be supposed to have influence. You may wash your bird with soap and water, wiping the feathers downwards, and cleansing only the dirty—i.e., the outer part of the feathers. When they are clean put the bird or birds in a small open basket with plenty of straw, and stand them in front of the fire till they are dry.

BRAHMAS NOT LAYING (Agriculturist).—If you consider the weather we have had—the constant changes and great variations of temperature—you will hardly wonder that, being hens and not pullets, your Brahmas have not laid. Have a little patience and all will be well. We do not admire your feeding. Do away with the rice, potatoes, Indian meal, and raw meat; also with the wheat and oats. Give ground oats or barley meal morning and evening; some whole maize at midday; vary by giving the scraps. Give nothing more. We attribute half the complaints and disappointments of the present day to artificial and excessive feeding.

EXTENSIVE POULTRY-KEEPING (Tauri Caput).—You put it out of our power to advise you, because you do not describe your locality and premises. How large is the stackyard? What is the acreage you command? What food can the birds get beside that which is given by hand? Is thrashing always going on? Why do you make no mention of fowls? Do you intend to sell none? There is no doubt poultry will pay if it is attended to, like any other business. The cause of much disappointment is that people wish to treat it as a hobby, as a mere fancy, and yet expect to find it profitable. In every pursuit we know, success is the reward of much and serious painstaking. As you cannot expect to get 130 eggs from every hen, you must make up the sum by selling young fowls for the table. This will enable you to sell the surplus stock of cock chickens. You must also keep a good supply of pullets for winter layers; their eggs will often make 2s. each. We do not believe you can make your poultry a certain income to be calculated like a sum in addition. With painstaking you can nevertheless make it pay, and if you will give us more detail of your appliances we will give you more advice.

BROMLEY POULTRY SHOW.—We have received from "THE TREASURER OF THE BROMLEY SHOW" a letter in reply to "REPORTER," but the defence amounts to no more than is contained in these two sentences—the errors were "for want of time and assistance," and that the mistake about free carriage was the Secretary's. We at once say that these are no excuses, for if any one undertakes to manage a poultry show, he thereby undertakes that it shall be well managed. We never heard of a show worse conducted than that at Bromley—theft and mis-statements marked it; and as we are writing we have received the following:—"Having won a prize at the late Bromley Poultry Show, I was somewhat surprised at receiving the amount less one shilling, which was charged for the prize card! As a frequent winner at many of our greatest shows, I ask if this is not 'something new'?" I will gladly sell the elaborate card to any of our correspondents, as I would rather possess the shilling, and I believe other exhibitors will agree with me.—A WINNER AT THE BROMLEY SHOW." Such proceedings must prevent exhibitors sending birds to any future show at Bromley.

OBJECTING TO JUDGES.—You have struck the right key to open the door for the reformation of a lot of abuse, and though I am not an exhibitor, I am aware of a circumstance where a judge has been treated in the manner

described by "RESPICERE AD FINEM," and which cannot be too strongly denounced.—C. B.

DORKING COCK'S COMB FALLEN (Richmond).—The falling comb is a disadvantage to a Dorking cock, but improved condition will sometimes cause it to become upright, except just at the back where it turns. If competition were close the defect would turn the scale against him.

FEEDING BEES (A Monmouthshire Lady Bee-keeper).—In this month's Bee-keeper's Calendar (p. 135) most of your questions have been anticipated. About half a pound of sugar mixed with an equal weight of water, given to each of your hives, will stimulate your bees to breed and keep up the hum of prosperity. Clean the floorboards at once. Widen the entrances at the end of March. You may remove your hives a few feet at any time with safety, and change the covers too, as you intend to do. The loss of so many stocks of bees in your neighbourhood and elsewhere is wholly owing to the ignorance and inattention of their owners. A few pounds of sugar and a little attention would have saved them.

BLEACHING GRASSES (E. H. E.).—Dissolve 2 ozs. of chloride of lime (bleaching powder), in three pints of water, put the grass into the solution, and let it remain in it for an hour; then take it out and rinse it in two or three changes of clean cold water.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	8 A.M.					IN THE DAY.					Rain.
	Barometer at 39° and Sea level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	in sun.	On grass		
1874.											
Feb.											
We. 18	Inchea.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	deg.	In.
Th. 19	29.573	55.2	54.2	W.	40.5	46.1	30.1	81.3	25.3	—	—
Fr. 20	30.032	37.0	55.5	N.W.	39.4	47.8	31.4	85.8	27.8	0.010	—
Sat. 21	30.248	29.9	29.5	W.	38.7	42.1	26.8	61.1	23.3	0.010	—
Sun. 22	30.085	39.3	37.9	S.	37.4	49.4	25.9	74.8	26.2	—	—
Sun. 22	29.818	43.6	43.0	S.	39.4	46.2	25.9	45.6	32.9	0.017	—
Mo. 23	29.861	42.5	42.0	N.	40.6	45.8	40.9	49.4	40.0	0.070	—
Tu. 24	30.060	41.7	41.6	N.E.	41.2	46.2	40.1	51.8	37.6	—	—
Means	29.949	38.6	37.8		39.6	46.2	33.9	64.7	31.4	0.107	

### REMARKS.

18th.—White frost; a beautiful winter's day; bright, dry, and cold.

19th.—Another white frost, and again followed by a very fine day.

20th.—Very foggy morning; occasional bursts of sun about noon; thick in afternoon, though a fine evening.

21st.—White frost again; fine till 2 P.M., then less bright, and rain in the evening.

22nd.—Dull though fair all day; slight shower in the evening.

23rd.—Dull, damp, and dark all day, sometimes rain; only one or two gleams of sun.

24th.—Dull morning, rather better in afternoon, and fine night.

Temperature variable, and about 3° below last week except underground and in sun. Barometer high and very little rain.—G. J. SIMONS.

### COVENT GARDEN MARKET.—FEBRUARY 25.

THE present moderate and open weather enables us to obtain a good supply of continental goods, which comprise Lettuces, Endive, Radishes, Artichokes, and Asparagus; the latter, however, maintains a high price. Of fruit there is nothing worth attention beyond the ordinary descriptions, excepting some Easter Beurré Pears. Hothouse Grapes and Pines are quite sufficient for the trade. A large arrival of the latter from St. Michael's took place on Saturday. Good sound samples of Potatoes are in good request, the bulk of inferior very heavy.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	0	2	6	Mulberries.....	£	lb.	0 0 0 0
Apricots.....	doz.	0	0	0	0	Nectarines.....	doz.	0	0 0 0
Cherries.....	£	lb.	0	0	0	Oranges.....	£	100	4 0 12 0
Chestnuts.....	bushel	10	0	20	0	Peaches.....	doz.	0	0 0 0
Currants.....	£	sieve	0	0	0	Pears, kitchen.....	doz.	3	0 3 0
Black.....	do.	0	0	0	0	Pears, dessert.....	doz.	3	0 10 0
Figs.....	doz.	0	0	0	0	Pine Apples.....	£	lb.	4 0 8 0
Filberts.....	£	lb.	1	0	1 6	Plums.....	£	sieve	0 0 0 0
Cobs.....	£	lb.	1	0	1 6	Quinces.....	doz.	0	0 0 0
Gooseberries.....	quart	0	0	0	0	Raspberries.....	£	lb.	0 0 0 0
Grapes, hothouse.....	£	lb.	2	0	7 0	Strawberries.....	£	lb.	0 0 0 0
Lemons.....	£	100	4	0	12 0	Walnuts.....	bushel	10	0 16 0
Melons.....	each	0	0	0	0	ditto.....	£	100	2 0 2 6

### VEGETABLES.

		s.	d.	s.	d.		s.	d.	s.	d.	
Artichokes.....	doz.	4	0	6	0	Mushrooms.....	pottle	1	0	2	0
Asparagus.....	£ 100	4	0	8	0	Mustard & Cress.....	punnet	0	2	0	6
French.....	18	0	25	0	Onions.....	bushel	4	0	6	0	
Beans, Kidney.....	£ 100	2	0	0	pickling.....	quart	0	8	0	0	
Beet, Red.....	doz	1	0	8	0	Parsley per doz. bunches	4	0	6	0	
Broccoli.....	bundle	0	9	1	8	Parsnips.....	doz.	0	8	1	0
Cabbage.....	doz.	1	0	1	8	Peas.....	quart	0	0	0	6
Capicums.....	£ 100	0	0	0	0	Potatoes.....	bushel	3	6	4	5
Carrots.....	bunch	0	6	0	0	Kidney.....	do.	0	0	0	0
Cardiower.....	doz.	8	0	6	0	Round.....	do.	0	0	0	6
Celery.....	bundle	1	3	2	0	Radishes.....	doz. bunches	1	0	1	0
Coleworts.....	doz. bunches	3	6	4	0	Rhubarb.....	bundle	0	9	1	5
Cucumbers.....	each	1	0	2	6	Salsafy.....	bundle	1	8	0	0
pickling.....	doz.	0	0	0	0	Savoy.....	doz.	1	0	2	0
Endive.....	doz.	2	0	0	0	Scorzoneria.....	bundle	1	0	0	0
Fennel.....	bunch	0	3	0	0	Sea-kale.....	basket	1	0	2	6
Garlic.....	£ lb.	0	6	0	0	Shallots.....	£ lb.	0	3	0	0
Herbs.....	bunch	0	3	0	0	Spinach.....	bushel	2	0	8	0
Horseradish.....	bundle	3	0	4	0	Tomatoes.....	doz.	0	0	0	8
Leeks.....	bunch	0	8	0	0	Turnips.....	bunch	0	3	0	4
Lettuce.....	doz.	1	0	4	0	Vegetable Marrows.....	0	0	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 5—11, 1874.	Average Tempera- ture near London.			Rain in 48 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
5	TH	Meeting of Royal and Linnean Societies.	48.9	31.8	40.3	16	33	46	45	45	17	11	41
6	F		48.6	32.2	40.4	18	36	6	47	5	29	9	45
7	S		49.1	32.4	40.7	18	34	6	48	5	40	10	56
8	SUN	3 SUNDAY IN LENT.	49.1	31.5	40.3	18	32	6	50	5	54	11	9
9	M	Meeting of Royal Geographical Society, [8.30 P.M.]	49.2	31.1	40.1	12	39	6	52	5	morn.	26	8
10	TU		49.6	31.6	40.6	16	27	6	54	5	9	1	49
11	W	Meeting of Society of Arts, 8 P.M.	49.1	32.2	40.7	19	25	6	55	5	23	2	22

From observations taken near London during forty-three years, the average day temperature of the week is 49.1°; and its night temperature 31.8°. The greatest heat was 67°, on the 10th, 1826; and the lowest cold 7° on the 10th, 1847. The greatest fall of rain was 0.60 inch.

## NOTES FROM MY GARDEN, 1873.—No. 4.

## MY GREENHOUSE, AND WHAT I DID WITH IT.

**F**IRST let me describe it; for as I have studied economy of space and construction, what I have done may be found useful to others similarly situated. It is a span-roofed structure, 20 feet long, 12 feet wide, and 11 high; the bars of the roof are fixtures, and there is an opening in the middle of it for ventilation; the sides, down to the brickwork, have their sashes each to open, and there is also a small sash at each end for the same purpose, so that in one great requisite of a greenhouse, ventilation, I am not deficient. For heating I have adopted the simplest plan I could find—the old-fashioned flue, with this exception, that the real flue is only about 6 feet in length, and the remainder, which is carried right round the house, is of drain-pipes 4½ inches in diameter. This I have found sufficient to exclude frost in the severest weather, and that is all that I want. It answers my purpose admirably. The furnace burns coke, cinders, coal—anything; and I have always felt that with a hot-water apparatus, however economical it might be, there was a great waste of power for a small house; moreover, unless it is used continually, there is great danger of its rusting and getting out of order. The inside of the house is arranged with a broad stage on each side, and a walk up the centre; in both of these I have studied utility, and I think, also, the appearance of the house is good. The stage stands 4 feet from the ground, and the walk, which is also made of battens, about 1 foot; underneath this latter I can stow away out of sight either pots or roots, such as *Tropæolums*, *Nerines*, *Lachenalias*, &c., which have gone to rest; while under the stage I can place anything that I may wish temporarily to have under cover. Attached to the house, but on a lower level, is another, about 12 feet long, a lean-to, in which I have a couple of Black Hamburg Vines, and which I am enabled to utilise in other ways. I should have said that I have over the walk in the upper house a hanging shelf running the whole length of the house, and two smaller ones at the end, all about 9 inches wide.

Having thus described the house, let me say something of its inmates. One stage I give up to hardwooded, the other to softwooded plants. It is the month of October, and the house is made snug for the winter. On the hardwooded side I have about three dozen plants of *Camellias*, the same of *Azaleas* of various sizes, and about half a dozen other plants, such as *Genetyllis*, *Acacia*, *Pineleas*, &c.; on the other side I have about four or five dozen of *Show Pelargoniums*—thanks to Mr. Charles Turner, these always being the new ones of the last and present season—these are for the present in small pots in order to economise space; then there are about a dozen *Roses* in pots, three or four *Tropæolums*, a dozen *Cyclamens*, some *Lachenalias*, a few *Primulas*, and some small *Zonal Geraniums* to give me a few winter blooms for specimen glasses. Then, on the upper shelf, I have in store pots

the few *Zonals* that I use for putting out in the garden in the summer; for, as I have previously said, I do nothing in the bedding-out line, and these are sufficient for my small wants.

It will thus be seen that my house is tolerably full; it remains thus until early in February. By that time some of the *Camellias* have bloomed, and are removed into the lower house; this gives more room to the *Azaleas*. On the other side *Lachenalia pendula* is out of bloom, and the *Pelargoniums* are potted into larger pots, and given more space; the *Roses* are beginning to show their blooms, and the *Cyclamens* are in full blossom, while a few *Hyacinths* add both colour and perfume to the house. The month of March sees another change—the *Camellias* have gone into the lower house, the *Lachenalias* gone out of bloom, the *Roses* mostly over, and the space is given to *Geraniums* on the one side, and the *Azaleas* on the other; the store pots of *Scarlet Geraniums* are removed to the lower house, and if I can do so, they are potted-off singly, and placed in a cool frame, and the whole length of the upper shelf holds about eighty plants of *Strawberries*; they can hardly be called forced fruit, but I have, at least three or four weeks before I have any out of doors, some nice dishes of fine and clean fruit. Last season my fruit of Dr. Hogg were grand.

The last change in the house is when these have fruited, early in June; then the *Camellias* and most of the *Azaleas* have gone into the lower house, where I leave them to grow under the shade of the Vines, the shelf is removed, and the entire space given to the *Show Pelargoniums*, which by this time have been tied-out, and admirably occupy the place given to them. I do not mean to say that they are symmetrical plants, but they are not leggy, and they give me a copious bloom. As the spring advances I place inside the glass some of *Collinge's* shading, which I find quite enough, and yet so thin that it does not require to be taken down until the need for it is past. After the *Geraniums* are over I consider the house free until the autumn again, and I think that it may be fairly considered to have done its duty. And this was what I did with my greenhouse in 1873: the lower house is used to hold a number of *Chrysanthemums* in pots, where they bloom freely and well up to the end of December.—D., Deal.

FRUITING THE *FICUS ELASTICA*.

*FICUS ELASTICA* is a general favourite with all who, like myself, grow a number of plants for decorative purposes. I think many will agree with me in saying that amongst all our valuable plants there is not one more suitable, taking all its merits into consideration, and the extreme low temperature in which it may be grown. As a decorative plant, where is there one which will bear the variable degrees of temperatures as this one? Throughout my twenty years' experience I heard not of its being bloomed and fruited until last year.

In February, 1871, I inserted my cuttings in a common Cucumber-frame without pots. They rooted well, and made a good start in March. They were potted in 60-sized

pots, placed in the stove until July, and afterwards potted in 48-sized pots. I then placed them in the greenhouse. As they became stronger they were frequently placed in vases, kept in the drawing-room for a week or ten days without water, and afterwards returned to the greenhouse. This treatment they endured frequently, until they became too leggy for that purpose. In February, 1872, I potted them in 36-sized pots to grow them on for conservatory purposes, and there they remained throughout the summer and autumn months up to December, frequently throwing roots over the top and underneath the pots, but these roots were cut off. It may be well for me to state that our conservatory was not heated the same autumn, the thermometer often reaching 34°.

In January, 1873, the heads were taken for cuttings, and the old plants removed to the early vinery for a short time. When they had started into growth I noticed at the axil of each leaf something making its appearance as if for producing more shoots, but found that it was bloom. This was in June, but to my disappointment, like the Fig, it bloomed inwardly. I still waited, anxiously looking forward to the ripening period. I could not see any alteration in the fruit until September, when it commenced to change colour. When fully ripe it was of a very dark brown with light spots. The fruit increased about three-quarters of an inch in length. Soon afterwards I was tempted to taste it; it was quite sweet, agreeable, and full of seeds.

The compost which I find suits it best is one-third light loam, one-third peat, adding leaf mould, cow dung, charcoal, silver sand, and a small portion of soot in equal proportions.—H. A. MANN, *Brampton Park*.

#### CULTURE OF WINTER BROCCOLI FAR NORTH.

In the *Journal* of February 19th I see an article on Winter Broccoli by your correspondent Mr. Taylor, in which he complains of the difficulty of getting it of a true strain, and I can fully endorse what he says on that head from experience. Winter Broccoli, in the north of Scotland, from where I write, is often a very uncertain crop under favourable circumstances, and of course much more so when seeds of mixed or inferior quality are supplied. In several places of note as vegetable-growing establishments which I have seen, the quarters selected for winter Broccoli were generally the most favourable which could be had as regarded exposure to the sun, and on being appointed to a master's place, I, of course, followed the same plan with varying success, until a few years ago a circumstance occurred which made me alter my system as far as situation is concerned. Having received a packet of a variety known as Carter's Champion, I had it planted along with the others in a favourable position, as I supposed, sloping to the sun, and in the autumn it looked all that could be wished in a Broccoli to stand the winter and do good service. The winter being a rather mild one all went well till about the middle of January, when I looked through my Champions, expecting them to turn in next month; but mischances will occur between the garden and the kitchen, so it proved in my case.

The first fortnight in February we had hard frosts every night, with bright sunshine by day, during which my Broccoli almost succumbed or was rendered useless; but fortunately a few lines of the same variety were planted in another quarter, where they were shaded in the early part of the day by some trees at 20 yards from them, so that they were partially thawed before the sun got at them. They came in during March, and very good heads they were; so from that time we have always endeavoured to have room for winter Broccoli in such a position as not to have the sun till partially thawed, and have succeeded well since.

It must be noted that ours is a rather light soil, and perhaps the above practice would not suit on clay soils. I know it is the practice in some places to lift and store the Broccoli in sand, and other means of protection afforded; but for one place with convenience for that, there are twenty where such cannot be attempted.

Another great mistake with Broccoli to stand the winter is overcrowding, the consequence of which is that after a few nights of severe frost, followed by sunshine, down go the leaves never to rise more; with the exception of a few near the crown there is little to be expected from such plants. We give 3 feet by 2½, and try to have the ground well trenched and manured, and by such means get stout robust plants fit to face all weathers. The selection of proper varieties, and not too many of them, is

of great importance for winter crops. In summer one can make many shifts, but not in winter.

Your able correspondent, "OLD FRIEND," has pictured but what is really the experience of many a gardener if willing to confess it. Now, in the case of Broccoli, every year brings out new varieties with high-sounding qualities recommending them to the notice of the public; they may or may not be what they are given out for, but as ("Burnt bairns dread the fire"), I always make a point of not dismissing the old tried sorts for the stranger, but rather plant an extra line before trusting him further till assured of his friendship by proof.

There is one introduction of late years which is a great acquisition to us in the north, whatever it may be in the south—that is, Veitch's Autumn Giant Cauliflower. The past two seasons we have cut it in fine condition from September to January, and I do not know how much longer we might have done so had more been planted, and such heads as to put the autumn Broccoli into the shade; it is the only addition of importance we have made to our old varieties, which in ordinary seasons give us a pretty constant supply. We have, first, Snow's Winter White, which succeeds the Cauliflowers; then Granger's Spring White, followed by Wilcox White, a really good sort which carries us well on to the Cauliflower season again. Now, there may be many other varieties of equal merit to these, but as they give us a full supply I am perfectly satisfied with them.

I believe much of success with Broccoli depends on not letting the plants remain too long in the seed bed before pricking them out, and finally planting them before they are too large and drawn-up, for once in that condition they may as well be thrown away. With plenty of room when planted out, and the soil well worked and kept constantly stirred with the hoe, and only such sorts as are to be depended on planted, no one on moderately light soil need despair of having winter Broccoli. But as a great many readers of the *Journal* have clay soils, an article on the management on such would no doubt be very acceptable.—J. S., *Aberdeen*.

#### ERANTHIS HYEMALIS, OR WINTER ACONITE.

This cheerful-looking plant, with its bright yellow flowers, is not half so often met with as it ought to be, for, like many other favourites of former days, it is utterly neglected by the fashionable flower gardener, who, in limiting his display to a certain period, has totally ignored the remainder of the season, and at least the first two and the last two months in the year have no place in his calendar. The plant is of neat growth, and produces rich-coloured blooms, equalling in that respect the best forms of the bedding Calceolaria; and although it blooms very often in January, and more abundantly in February, at a time when flowers of all kinds are scarce, its importance seems not to be duly appreciated, probably owing to some idea of its being difficult to manage, and also, perhaps, from its not being sufficiently known. Be this as it may, a plant with bright shining foliage of a clear unspotted green, with flowers larger than the Primrose, supported on stalks not more than 3 or 4 inches high, and appearing almost in mid-winter, ought not to be lost sight of. It is by no means plentiful; possibly it was more so half a century ago, and the places where it is most likely to be found in quantities are some of the old-fashioned gardens which it is a treat now and then to meet with.

Perhaps one of the causes of this plant's not being more frequently met with in fashionable winter or spring bedding is the fact that it does not transplant so well as many others, and the best examples of it are seen where it has been let alone for two or three years; then it rushes up in luxuriance every Christmas, and blooms at the proper time. The best examples of it at this place are planted as edgings to Rose beds, and also as edgings or rings round single trees or shrubs, where it is not disturbed the whole year round. In such places it ripens seed, sows itself, and often comes up amongst the turf, or it may be on the gravel walk, and it also increases itself at the root, but not very rapidly; so that in most cases where an edging of it is wanted I would recommend sowing the seed as soon as it is gathered, and that care should be taken that it is not disturbed till the ensuing spring, when it comes up thickly enough. Excepting transplanting in order to fill-up defective places, I would leave the plants in the seed row, unless they are very close together, in which case thinning may be necessary.

Usually this plant thrives in a dry open soil, but our experience with it shows that it also succeeds well in one of a

somewhat chalky character, as we have seen it in such a position struggling successfully to maintain itself amongst the grass and other herbage under trees. If grown in the mixed flower border a stout stick or other low mark should indicate where it is, as during a great portion of the year the bulbs are dormant and there is no foliage. The edges of rockwork also afford a favourable position, likewise the margins of shrubberies, and similar places. Early in February, when it shows itself along with the Snowdrop and Primrose, no plant is more generally welcomed; and whether growing at the base of a palatial residence, or as a patch by the pathway to a rural cottage, it is equally at home.

Although I have advised sowing the seed where the plant is wanted, the Winter Aconite bears transplanting tolerably well when it has just started to grow, and in such a condition it may be removed without much injury from the seed bed; and as this is often more convenient than the other modes of obtaining a quantity, I may remark that it answers very well. In some soils that suit the plant it is extremely accommodating, and I have seen it overcome grass and other herbage that usurped its place in the autumn; therefore those anxious to have it in abundance need not be apprehensive of its want of constitutional vigour, provided the soil is of the right kind. Its greatest enemies are the spade or digging-fork, and in some cases the scythe; in other respects the Winter Aconite is better able to take care of itself than many other plants, and, as I have already remarked, few are more worthy of notice, coming into bloom amongst the very earliest of the early flowers, and presenting us with the same glittering tint of yellow which renders the Crocus so acceptable, while it is some weeks before it, and altogether of a different character.—J. ROBSON.

## ROYAL HORTICULTURAL SOCIETY.

MARCH 4TH.

**FRUIT COMMITTEE.**—A. Smee, Esq., F.R.S., in the chair. Apple Annie Elizabeth, a kitchen variety which was certificated by the Committee in 1868, was sent by Messrs. Harrison & Sons, Leicester. The fruit were in good condition, juicy, and solid. The same firm also sent fruits of Duke of Rutland Apple taken from the seedling tree, but they had been badly kept, and were of inferior quality. Pots of Dwarf Kidney Beans were sent by Mr. W. Rapley, gardener to R. Hudson, Esq., Clapham Common.

**FLORAL COMMITTEE.**—Mr. J. Fraser in the chair. Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent fifty-three pots of Roses, comprising the best of the Hybrid Perpetuals and Teas. The flowers were not quite so large as they are at the later exhibitions, but the foliage was very beautiful, and the blooms quite as brilliant in colour as they are to be had at any season. Amongst the crimson shades the best was Mlle. Marie Radt, followed by such sorts as Sir Richard Wallace, Duchesse de Caylus, Madame Victor Verdier, and Fisher Holmes. Of rose shades Lyonnaise, Elie Morel, Madame Marie Girodte, Mons. Noman, Paul Néron, and Anna Alexieff were the most noteworthy; and Bessie Johnson, a beautiful blush. Teas consisted of Coquette de Lyon, Madame Falcot, Marcelin Roda, and Madame Willermoz; the first two are fine button-hole flowers. The same firm sent a collection of well-grown plants of early-flowering Clematis, nice healthy plants furnished with a score of flowers on each. Lucy Lemoine, an exceedingly fine variety of the Fortunei type, with pure white double flowers, had a first-class certificate. Orchids and Amaryllis were sent by the same firm. Dendrobium thyrsiflorum was very beautiful. What a pity it is that the flowers are of a fugacious character. Vanda suavis, one of the best of the Vandas, was also shown, likewise a handsome plant of Dendrochilum glumaceum. The following, sent by Messrs. Veitch, also obtained first-class certificates. Rhododendron Duchess of Edinburgh, a garden hybrid resembling R. Lobii in the colour of the flowers, which are a glowing vermilion scarlet—the small seedling plant which was exhibited shows it to be very floriferous; Rhododendron Early Gem, a very useful early-flowering variety, of which a basket was sent lifted from the open ground—it has a profusion of bright lilac-coloured flowers. In addition baskets of Ligustrum japonicum and L. japonicum lucidum, broad-leaved Privets, were sent by Messrs. Veitch.

Mr. Bull, of Chelsea, sent Encholirion corallina, with pale yellow flowers and red bracts; a cut specimen of Medinilla amabilis, with lilac peach-coloured thyrses; and Cymbidium Mastersii noticed in previous reports.

Mr. Denning, gardener to Lord Londesborough, Norbiton, sent Epidendrum imperator, with brilliant cinnabar flowers, with a paler column and rose lip. This was awarded a first-class certificate.

A box of the charming early spring-flowering Iris reticulata came from Messrs. Barr & Sugden, of Covent Garden. This plant should be in every garden, as it flowers out of doors, with

the Crocus. But its delicious fragrance is most fully developed, and the intense purple colour shows up to the best advantage, when the sun streams upon the plants through a glass screen.

Mr. Barker, nurseryman, Littlehampton, Sussex, sent a seedling Imantophyllum named Barkeri with striped leaves, good both as a flowering and ornamental-foliaged plant, though the flowers of the specimen exhibited were not so large as in *I. minimum*, of which it appears to be merely a variegated form. From Messrs. Standish & Co., Royal Nurseries, Ascot, came a group of Hyacinths, Cinerarias, Spirea japonica, Clematises, and double-flowered Zonal Pelargoniums; and from Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood, a group of seedling Cyclamens, and one of Soldanella alpina.

## NOTES AND GLEANINGS.

**THE TRIALS OF FLOWERS AT CHISWICK** this season are the following:—New Pelargoniums, for bedding purposes; Pelargoniums of the pink and rose-coloured sections, as pot plants; Fuchsias, as pot plants, grown to larger size than heretofore; Pentstemons, of which some very fine sorts bloomed late last year; and flowering Begonias of the boliviensis strain, now becoming so numerous. A collection of bedding Violas and Pansies is also being got together. Those who possess novelties which they desire to have tested, as well as those who are willing to render aid in making up the collections of these flowers for the general information of the floral world, are invited to send their plants to Mr. Barron, the Gardener-in-Chief, at Chiswick, as soon as they conveniently can. It may be mentioned, as an inducement to raisers of novelties to send their own productions direct to Chiswick, that it has recently been decided, on the recommendation of the Board of Directors, to issue certificate cards in the case of all subjects certificated at the gardens, and which will of necessity be made out in the name of the donors. This has not hitherto been done, as the announcement has been reserved for the report; but from the frequent delays which occur in the issue of the latter, it has been thought desirable to issue the certificates immediately after each of the Chiswick meetings.

Mrs. Mary Treat publishes in the "American Naturalist" for December, 1873, a remarkable contribution to our knowledge of the sensitiveness of the leaves of the Sundew, her experiments being chiefly made on the large American species *Drosera filiformis*, the leaves of which capture and kill moths and butterflies 2 inches across. Her observations are in accordance with those already recorded on English species, that the motion of the glands is excited only by organic substances, or if for a very short time by mineral substances, that the excitement passes off almost immediately. The most astonishing of her observations is, however, that when living flies are pinned at a distance of half an inch from the apex of the leaf, the leaf actually bends towards the insect until the glands reach it and suck its juices. In the "Naturalist" for January is an account of Roth's observations on the irritability of the Sundew, made nearly a century ago.—(Nature.)

## KEEPING GRAPES IN WINTER.

1. Thin the bunches more severely than if not intended for keeping.
2. Give them, especially when ripening, plenty of light, and a circulation of dry warm air.
3. Complete the ripening, if practicable, by the first week in October at the latest.
4. Allow no stagnant water about the roots of the Vines.
5. Keep all inside surfaces dry after the 1st of October.
6. Avoid a low stagnant temperature; keep inside of house steadily above the external temperature.
7. Keep the house close during foggy damp weather. Keep the temperature at about 45°, with just a chink of air at top, and this, if possible, so as not to allow the damp to enter.
8. Remove all faulty berries, cut-off all laterals, and, if necessary, remove a part of the foliage.

**Results.**—Out of three hundred bunches kept in a low snuk pit under the above conditions, not 2 lbs. were lost by decay.—(The Gardener.)

## DIG-UP THE POTATO BEFORE RIPE.

The remedy which is recommended by Mr. Luckhurst is certainly the best and most practicable for avoiding the disease. As an amateur I have practised it for ten years, and can, therefore, fully corroborate all he says. I have grown Fox's Seedling, Dalmahoy, Fluke, Paterson's Victoria, Lapstone, Early

Betty, Sutton's Red-skinned Flourball, and other sorts, and have not by disease lost as many gallons as I have practised the method referred to years.

"D., Deal," asks in your number for February 19th, Are the Potatoes to be dug before the skins are set? I have done so for years with the above result. Last year I planted from the 22nd to the 29th of March, and dug my crop and housed it from the 16th to the 31st of July. I dig them on a sunny day, and let them lie open to the sun until evening, when they are carried in-doors, and kept in boxes.—C. B., *Godalming*.

### VELTHEIMIA VIRIDIFOLIA CULTURE.

This is an old-fashioned bulbous plant which has been introduced from the Cape of Good Hope more than a hundred years. It is of easy culture, thriving well in any good light sandy soil. The flowers somewhat resemble those of the Tritoma, and continue a long time in perfection. Single buds in small pots will flower during the winter months freely, and they produce a very pleasing variety among gay-flowering plants. We prefer growing three or four bulbs in what are termed 32-pots. After the flowering season is over gradually withhold water, but take care never to allow them to become dust-dry.

This species is quite hardy, and may be placed out of doors all summer behind a north wall. About August place them in a frame, and give them plenty of air and water. Before frost sets in remove to a shelf in the greenhouse till the flowers appear, when they may be placed among other flowering plants. If kept free from damp the flowers will continue in perfection for three months, or even longer, and they have a very pretty effect among other inmates of the greenhouse in the dull winter months.

It can be readily increased by offsets from the bulbs, which may be potted-off and grown-on until they become strong, when they will produce flowers. This is a very interesting plant, and requires little care or attention.—J. SMITH, *Exton Park, Rutland*.

### ROYAL HORTICULTURAL SOCIETY'S COUNTRY MEETINGS.

WE have received the following from Messrs. Veitch and Sons:—

"You last week published a letter from the Secretary of the Royal Horticultural Society to us with reference to the non-holding of a provincial exhibition this year. We shall feel obliged by your publishing this week the enclosed, which is our reply to the Secretary's letter."

"Royal Exotic Nursery, King's Road, Chelsea, S.W.  
February 28th, 1874.

"W. A. Lindsay, Esq., Secretary, Royal Horticultural Society.

"Dear Sir,—We beg to acknowledge your letter of the 25th inst., to which pressure of business has prevented our sooner replying.

"We most express our very great surprise that it is only at so recent a date that the Council acknowledged that they have been unable to come to any satisfactory arrangement with regard to a provincial show being held this year, that acknowledgment being obtained only in consequence of the protest sent to them by exhibitors who acted on a rumor which had reached them; and we think it is not complimentary to exhibitors as a body, or treating them with the courtesy they are fairly entitled to, to ask them only at the last moment, as it were, to help the Council by 'proposals and suggestions' out of what appears to us to be a very great misfortune for the Society.

"Had the Council really wished to have the opinions and suggestions of exhibitors, we submit that it would have been much better to have solicited them last autumn at some of the meetings held for regulating the prize list for this year.

"When the Annual Report was issued by the Council a short time since, we noticed that the Provincial Show at Bath last summer was specially alluded to as a 'horticultural and financial success,' also that 'very material alterations were proposed in the arrangement of future provincial shows, with the object of increasing their scientific value and social comfort.'

"We think, therefore, from the Council's own statement there is every cause to regret their inability to arrange for such an exhibition, and under the circumstances of the case we fail to see why the last portion of the paragraph quoted was thought necessary, when they must have known that no exhibition was likely to be held this year. We must also add, that as you say in your letter to us, 'the Council are most anxious to promote and encourage these shows,' it seems to us extraordinary that they are unable to carry out arrangements which were so successfully managed by the late Council during the last six years.

"In conclusion we wish to say that we are only now stating our own views, having had no opportunity of conferring with those gentlemen who signed the protest with ourselves.

"We are, dear sir, yours faithfully,  
"JAMES VEITCH & SONS."

WOULD you let me correct a printer's error in the letter that you were good enough to print last week? I spoke of gardeners as "these more working bees;" the change of a letter has made it *mere* working bees. No one who reads the articles

in your Journal by gardener contributors or Mr. Fish's speeches would call first-class gardeners mere working bees.

I see the question of a country show is being revived. As I read the printed accounts, they seem to show that not only all the old country show fund, but the surplus from the show at Bath last year, have been spent by the acting Council for the general (that is, mainly Kensingtonian) purposes of the Society. But still it seems a vast pity that such a temporary misappropriation of the surplus should lead to a break in country shows which have really helped horticultural progress.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath*.

### FLOWERS FOR OUR BORDERS.—No. 27.

TRITONIA AUREA.—GOLDEN-FLOWERED TRITONIA.

THIS fine Caffrarian Irid when vigorously grown, and with healthy foliage, is, undoubtedly, one of the handsomest species not only of its genus, but even of the natural order to which it belongs. Unfortunately, its thin membranous foliage not seldom becomes in a dry atmosphere a prey to that pest of the



*Tritonia aurea*.

gardener, red spider, and its vitality being thus weakened, the development of the flower-spike is checked, and the plant is shorn of much of its beauty. With ordinary care, however, and the occasional use of Gishurst compound or Fowler's insecticide, followed by the syringe, it is by no means difficult to preserve the foliage in a healthy state, and the plant will well repay the amateur for these slight attentions.

Strong corms will produce stems from 2½ to 3 feet high, with a branched spike bearing numerous flowers of a rich apricot colour, each 2 inches across.

It is found to succeed best in a mixture of equal parts of heath soil, loam, and leaf mould, with a small portion of sharp white sand; in short, in the same compost in which the *Gladiolus*, *Ixia*, and most of the plants usually classed as Cape bulbs are known to flourish. The corms should be potted about October, in well-drained pots filled with the above compost, and placed in a cold frame, with just sufficient protection to ward-off severe frost; and during the midwinter months it should be kept nearly dry. Where there is not the convenience of a cold frame the pot might be safely placed in the window of a cool room; and in either situation it may be retained till May, when it should be stationed out-doors, in a partially shaded border, upon ashes, to exclude the worms. As soon as the flower scape appears the plant may be removed

to the window, or a cool greenhouse, where the development of the blossoms will proceed more favourably than when fully exposed. In the southern counties, in favourable localities and in suitable soils, it may be planted out after danger of frost is over; but the corns should be repotted in autumn, as it is incapable of resisting severe frost.

*Tritonia aurea* may be increased by seed, which is produced by the strongest flower scapes, if the plants are continued in growth after flowering; and the seed should be sown as soon as gathered, the young plants being carefully preserved from frost the following winter. It is worthy of remark in connection with the growth of this plant, that the new corn annually produced is found at a distance varying from one to several inches from that of the previous year, with which it is connected by a stout fibre. Whether the older corns perform any useful function is uncertain, but they never flower but once, though often remaining undecayed for years. As the bulbs of some species of *Tritonia* may be preserved in a dry state for weeks, it is necessary to point out that in the case of *T. aurea* the drying-off process must not be attempted. When the foliage withers water may be partially withheld, but the soil must on no account be permitted to become quite dry.

The blossoms of this plant when dried, and afterwards moistened with warm water, give out a strong odour of saffron, which circumstance has induced Dr. Planchon to constitute it a new genus under the name of *Crococoma*, by which it sometimes occurs in catalogues.—(*W. Thompson's English Flower Garden, Revised by the Author.*)

### A NEW ENEMY OF THE POTATO.

I wish to say a few words about an enemy which threatens to lay waste one of Europe's most valued esculents, the Potato. For a long time North America has had to contend against two foes, which devoured the early shoots and leaves of the Potato, and thus destroyed the hopes of the farmer and gardener. These were beetles belonging to the same family as the Blister-fly, and named *Lytta atrata* (or *vittata*) and *Cantharis viniaria*. They can be kept within bounds; but of late a third beetle has appeared among us, which really threatens to drive the Potato out of cultivation altogether. It bears the name of the Colorado Potato-beetle (*Doryphora decem-punctata*); and should it once reach the Atlantic coast, and be carried unobserved across the ocean, then—woe to the Potato-grower of the old country!

A man must witness the myriad legions of this insect, and the ravages of its never-tiring larvæ, in order to form an idea of the terrible danger with which Europe is threatened. For myself, judging from the tenacity of life exhibited both in its larval and perfect condition, I have not a doubt that it will soon overstep the bounds of North America, and make a home for itself in other lands.

Its true domicile is in the Rocky Mountains, where it feeds on a species of wild Potato, *Solanum rostratum* (or *carolinianum*). No sooner, however, had the edible Potato (*Solanum tuberosum*) been planted by settlers at the foot of these mountains, than *Doryphora* attacked it greedily; the more largely its cultivation extended westward, the faster did its insect foe travel in an easterly direction, and scatter itself over the land. In the year 1859 it was located one hundred miles west of Omaha city, in Nebraska; in 1861 it showed itself in Iowa; in 1865, not only had it begun to devastate Missouri, but it had crossed the Mississippi in Illinois, everywhere leaving behind it flourishing colonies. In 1868 Indiana was visited; in 1870 Ohio and the confines of Canada were reached, also portions of Pennsylvania and New York; and its entrance into Massachusetts was notified. During the year 1871 a great army of these beetles covered the river Detroit in Michigan, crossed Lake Erie on floating leaves and similar convenient rafts, and in a very short time took possession of the country between St. Clair and Niagara rivers. Having got thus far, in spite of all efforts to stay their progress, there is every reason to believe that before long we shall hear of them as swarming in the streets of New York and Boston (as they already swarm in the city of St. Louis), and then their passage across the Atlantic is a mere matter of time. Moreover, the beetle in its different stages is so entirely unaffected by the extremes of heat and cold, of wet and dry, which it has met with here, that I have no doubt it will care as little for the changes of climate which occur in the temperate zone of Europe, and, once settled, will quickly become naturalised.

The devastations of the Colorado beetle are all the greater

from the fact of its propagating itself with extraordinary rapidity, several broods following each other in the course of the year. The first batch of infant larvæ appears towards the end of May, or, if the weather be mild, of April. In fact, scarcely has the Potato plant shown itself above the ground, before the insect, which has been hibernating during the winter, also wakes to life. The female loses no time in depositing from seven hundred to twelve hundred eggs, in clusters of twelve or thirteen, on the under side of a leaf. Within five or six days, according to the state of the weather, the larvæ escape from the egg and begin their work of devastation, which goes on for some seventeen days, when the little creatures retire below the soil, in order to undergo the pupal condition. After a delay of ten or fourteen days the perfect insect comes into being, and the business of egg-laying commences anew. In this way, according to recent observations, three broods follow each other; the last, as just stated, wintering below the surface of the ground. No description can do justice to the marvellous voracity of this insect, especially in its larval state. When once a field of Potatoes has been attacked all hope of a harvest must be given up; in a very few days it is changed into an arid waste—a mere mass of dried-up stalks.



Fig. 1.—Colorado Potato beetle in different stages, from egg to perfect insects.

At one time the cultivator indulged in the vain hope that *Doryphora* was a mere passer-by, that he would do his worst and then move on, without becoming a permanent nuisance. Others, again, fancied that a hot summer and autumn, followed by a long drought in the ensuing year, tended to diminish its numbers. But it has been proved incontestably that the diminution was only due to the circumstance of many of the larvæ perishing, through being unable to enter the ground hardened and baked by the great heat; plenty were left to continue the breed.

Of the many nostrums that have been employed for the destruction of this beetle, one only has shown itself to be of any value. I mean, dusting the plants with the highly poisonous substance Paris green—a compound of arsenic and oxide of copper. However, setting aside the dangers of inhaling this deadly mixture while spreading it over the fields, there is the additional peril of impregnating the soil with it—a peril which experiments carried out at Washington have shown to be well founded. There remains, therefore, only the plan of hand-picking, day after day, the eggs, larvæ, and beetle; but even



Fig. 2.—a, Colorado beetle. b, Foot of ditto. c, Pupa of ditto. d, Wing-case, enlarged.

this operation requires considerable care, for the juice of the crushed insect and its larvæ produces bladders and blisters

wherever it comes in contact with the skin. If a wounded spot be touched by it, severe inflammation ensues, which is liable to pass into ulcers, and an application of it to the eye endangers vision to a very serious extent.

Fig. 1 gives an idea of the Colorado Potato beetle in its different stages. The eggs are of a deep orange-yellow. The larvæ on first emerging are of a blackish hue, which passes quickly into a dark red, with a slight orange tint. On attaining their full size the colour varies between orange, reddish-yellow, and flesh. At *c*, fig. 2, is shown the pupa; at *a* the perfect insect, natural size; a foot is portrayed at *b*; a wing-case considerably enlarged at *d*. The ground colour of the latter is creamy-yellow (*rahm-gelb*), with five black longitudinal stripes, of which the third and fourth unite at the base.

*Doryphora* does not by any means confine itself to the Potato. In places where that esculent is wanting, it will support itself on any other member of the Solanaceous order—the Egg-plant (*S. Melongena*), the Tomato (*S. Lycopersicum*), or the Winter Cherry (*Physalis viscosa*). Indeed, in the northern parts of Illinois and in Wisconsin, incredible as it may appear, it has established itself in the Cabbage garden as readily as in the Potato field.—FR. H., *State of Illinois*.—(*Hardwicke's Science Gossip*.)

[Our attention to the above was enforced by the following note from a gardener's worthy companion:—

"My husband's eyes are not in a writing condition. He asks me to send you a paper (but doubts not that you have seen it) containing a notice of the Colorado Potato beetle. It has been sent to my husband by Mr. Beaulah, an intelligent farmer and Journal admirer, who has for a long time been making inquiries, and says that his private information from the States warrants him in saying that the account is nothing overdrawn. My husband thinks if the pest find its way to England it will be in a pupa state with seed Potatoes, or that some enthusiastic naturalist will nurse some precious specimens, and get them over alive, and then expect a medal from the Entomological Society for his skill and perseverance."]

### A SUGGESTION.

A THOUGHT has struck me that the Royal Horticultural Society might do good service by offering prizes or certificates of merit for the best-managed gardens in the district in which it holds its provincial exhibition, thus taking a lesson from our cottage-garden societies. It does not take a very sharp eye to perceive the improvement that takes place in village gardens where merely nominal prizes are given: weeds disappear, crops grow more vigorously, and the men are better. I am aware that the difficulties would be greater in judging large gardens—it would be difficult to find judges in whom everyone could place confidence, but I believe competent and impartial men are to be found. The expenses would be great, but I think the benefit to be derived would be greater.

The provincial meetings of the Royal Horticultural Society are getting to have the character of annual gatherings of gardeners. We can always reckon on meeting some old friends and making a few new ones; and I must confess that I attend these meetings more for this purpose than for seeing the exhibition itself. We can also generally arrange to make our little holiday tour at the same time by visiting some of the places in the neighbourhood. But there is a difficulty—there are always more places within reach than one can find time and money to visit. All these places are reported in the horticultural papers to be wonderfully good, and it is true there is something good in each of them; but one cannot get at the comparative quality of them, and is always disappointed in all because some are better and some worse than expected. In a little tour I took at the time of the Exhibition at Manchester last September I had the pleasure of seeing what I believe was the best managed garden I ever saw, and I had hardly heard the name of it before, and certainly should not have thought of going there to look for good gardening had I not been directed by one who knew. If some scheme could be launched whereby we could have an authoritative comparison of some of the best gardens within reasonable distance of the exhibitions it would be a great assistance to those who, like myself, are anxious to pick up as much information as possible in the shortest time, while the man who should be fortunate enough to be marked out as the best gardener within twenty miles would have something to be proud of. We know we cannot be certain that a man is a good hand at his profession because he sometimes takes the first prize for Grapes or Cauliflowers.

Perhaps his principal attention has been given to those particular things he exhibits and others have been neglected, or they may be the only good specimens he has; but examine them where they are growing, and give prizes or certificates for the best house of fruit of any one kind, the best managed kitchen garden, or the best general gardening, and you at once stamp the recipients of these honours as something to admire and imitate.—WM. TAYLOR.

### ROSE PETALS.

I WISH to say a few words in favour of Roses with large petals. Grace and beauty of form in our floral queen must go with large petals. The smaller-petalled Roses are to the eye of the artist often too confused and abrupt in their curves to be nearly so graceful as the larger ones. We must all admit that the most beautiful shape for a Rose is the deeply-cupped or half-globular form, as in Madame Rothschild, Pierre Notting, Maréchal Niel, &c. With this shape it is evident that much of the reverse or back of the petal is seen, and when in red Roses this is of a whitish tint or dull leaden purple, which is too often the case, the beauty of the form is seen to disadvantage, as colour attracts and fills the eye before it takes note of shape: therefore it is most desirable that brilliant-coloured Roses should be thorough, or the same on both sides; and it would be well in judging a new Rose to bear this in mind, as well as the importance of large well-curved petals.

The most perfect specimen of a large-petalled Rose I ever saw was a *Lælia*, nearly globular, measuring  $5\frac{1}{2}$  inches in diameter by nearly 4 inches deep. After this magnificent bloom had stood three days, and been twice exhibited, I measured some of its singularly large, thick, shelly petals, 4 inches in diameter, and like lovely pink saucers. The curved, arched, or shell-shape of the petals adds greatly to the endurance of the flower, and exhibitors have often proved that the best Roses to stand long journeys are those approaching the globular in form.—HENRY CURTIS, *Devon Rosery, Torquay*.

### JAPANESE GARDENS.

Shimonoseki, November 25th, 1873.

I ARRIVED here from Yamajuchi on the evening of the 22nd, having travelled overland. I found the Rice crop all secured, and the price has fallen to about 1*d.* *rie* or 6*s.* per picul. The country is now beautiful in appearance, owing to the different colours of the leaves on the trees. On the hillsides the Japanese Wax tree (*Rhus succedanea*), which is extensively cultivated south of Kobé, and which grows to the size of an ordinary Apple tree, or the Chinese Tallow tree, has now turned the colour of its leaves from green to a deep blood-red, and as they ripen they fall off.

The country between Nagasaki and Kobé is, as I have before stated, noted for its excellent climate, and here flowers and shrubs grow to great perfection. At the present time you can hardly pass a single house without noticing the beautiful Chrysanthemums, some of the blooms fully 6 inches across them, and of every colour. As this is the royal flower it is cultivated to a great extent, and the flowers are taken to the large towns, where there is no room for small gardens, and sold to the merchants, &c. The Japanese gardener understands the art of cultivating the Chrysanthemum far better than we do in England, and there is much for our floral friends to learn in their cultivation. I can assure them that the wonderful size to which these flowers are brought would astonish them. I find that the Japanese are very careful in selecting the best soil they can procure, and only allow two or three blooms to come to perfection at the end of each shoot. Some of the flowers are remarkable, and most peculiar in form and colour, and I never saw any like them in England. We have white petals striped with red like a Carnation or Camellia, others looking like the fringe of a shawl.

When I was last at Nagasaki I visited several large nurseries at that place, and found several shrubs and plants of extraordinary size. What would some of our English florists say to having Azaleas 45 feet in circumference?—such was the case with one of which I took the measurement. The Japanese, as I have before informed you, have a neat way of cutting and training their shrubs. Some are perfectly flat at the top, reminding you of a dining-room table, and when in flower the Azalea, trained in this way, is a gorgeous sight. I also noticed several variegated plants, the names of which I have been unable to learn, except those which are very general, includ-

ing the *Farfugium grande*; also the *Sciadopitys verticillata*. Amongst the trees I observed a Fir which was very remarkable, and must have given its owner considerable trouble in training. It was about 20 feet high, but the branches were brought into the shapes of tables and chairs, which must have been a work of constant labour.

There is a Japanese gentleman connected with the custom-house here who is a great florist, and spends a fortune on his plants. On the morning after my return here I noticed a boatload of Camellias coming on shore from a steamer which had just arrived; and as you are aware I have always taken the greatest interest in all connected with horticultural matters, I went to examine them. This gentleman had just imported them from Hong Kong, and as he found I took an interest in flowers he invited me to see his gardens, and well did it repay me for the short walk. His house is situated on the hillside, overlooking the entire straits, and is protected from all the north-east and northerly winds by nature; and owing to the way in which he has laid out his grounds by planting Bamboo and other trees, he acquires artificial protection from other points. He has had a greenhouse built after the English plan, and there I found one of the finest collections of Ferns perhaps in the world. I counted sixty-nine different species, all looking the picture of health. If I could have only had Mr. Baines, of the Yorkshire Museum, along with me, or some other of my floral friends, I should have been enabled to have given your readers a far better description of these grounds than is now in my power. I will, nevertheless, attempt to describe them. However highly I may speak of them, I shall be unable to do them the justice they deserve.

Situated on the mountain side, the rear protecting them from north-east and east winds, stand a number of fine forest trees, which are common in this district. There is the *Abies firma*, *Pinus Massoniana*, *Cryptomeria japonica*, *Sciadopitys verticillata*, *Salisburia adiantifolia*, or Maiden-hair tree. There are about ten of the latter, all of which have attained a great size. As I have had to translate the names from Japanese I may have made errors—I hope your readers will excuse me. The Bamboo grows thickly amongst them. To the front, or south, the land and sea view is splendid, giving a prospect of the entire straits with the numerous mountains on the opposite side. His house is situated close to the trees, and there are three terraces, which must have been some considerable expense in their construction. These are laid out in all kinds of designs. The highest terrace, or No. 1 terrace, is adorned with miniature gardens, comprising shrubs such as the *Parasol Fir* (*Sciadopitys verticillata*) and Pines of other varieties; there are also a number of fish ponds, in which perhaps from twenty to a hundred gold fish are alive, swimming amongst the Lilies, which almost cover the entire surface of the water. On the second terrace *Azaleas* predominate; and I expect next spring I shall have a treat in again inspecting this garden, as each plant is different in colour. There are, amongst other shrubs I had pointed out, a species of *Eurya*, and a shrub, the name of which I have been unable to ascertain, but the description given by its owner is that it bears sweet-scented flowers in the first place, and now, as I see it, looks like our Holly, being covered with red berries. On the lower terrace there are more artificial gardens, and the Camellia here is the principal plant grown, though there is such a collection of variegated shrubs cut in the most beautiful shapes that I have ever seen, thus taking away the effect of the Camellia being too monotonous. On the border the *Chrysanthemum* in every shape and colour is now in full bloom, producing a very beautiful effect. On a future occasion I will give your readers an account of a visit to another garden in this neighbourhood.—JOHN TASKER FOSTER.

#### A WORD FOR CAST-IRON BOILERS.

Up to the present, stern winter has favoured our fuel bills considerably, but should the wind by chance, nautically speaking, chop round to the north-east now that nearly everything under glass is pushing into growth much heat will be required to prevent injury to young and tender plants, and would greatly affect this item of garden expenditure, although the season is so far advanced. Any information, therefore, how to avoid heavy fuel and new boiler bills is sure to be interesting to the many, and I for one feel much obliged to Messrs. E. G. Henderson & Son for their able letter, giving their experience with Messrs. Green & Son's wrought-iron boilers; but at the same time I regret they should have omitted to speak on the most important points—durability and the loss of heat in the

stokehole, which latter is inevitable with any apparatus not surrounded with brickwork or “insulated” to stay the radiation, and it is obvious that the heat escaping by this means cannot re-enter the piping for distribution where required. This necessarily involves a serious loss.

With self-setting boilers, generally speaking, the doors and frames are in dangerous proximity to the fire; these mostly become red hot even if the apparatus is but moderately pushed, and if composed of wrought iron will soon scale, and warp, and become defective. This, I am under the impression, is a serious objection to these kinds of boilers; but perhaps Messrs. E. G. Henderson will kindly enlighten us as to their probable lasting powers, as I understand from the conclusion of their letter that four by the same makers have been selected to replace others.

In carefully going through their letter I find with regret that the cast-iron tubular alluded to has not received that respect it is justly entitled to in this instance, and I need not say it is of the utmost importance when criticising any article of commerce that there should be no reserve or motive beyond benefiting the public at large; and further, if my memory does not fail me in dates and years, the fractured tubular served them considerably longer (doing its work cleverly to the same piping) than two of the wrought-iron now spoken of by them in such eulogistic terms.

In conclusion I should be glad to learn how much the two removed wrought-iron boilers were fractured less than the tubular, and why removed to give place to others composed partly of wrought and cast iron.—N. B.

#### TRIAL OF ONIONS AT SEAHAM HALL, DURHAM, 1873.

Name.	Ripo.	Keeping Qualities.	
Brown Globe .....	Aug. 12	Good	A good old variety of the true shape.
Blood Red .....	" 12	Good	A dark red variety; seems likely to keep a long time to come.
Brown Spanish .....	" 12	Good	A good useful sort of medium size.
*Bedfordshire Champion .....	" 20	Good	Good shape; seems to keep well.
Deptford .....	" 13	Very good	A large variety, sandy brown colour, and good shape.
Danvers Yellow .....	" 12	Good	Much the same character as Bedfordshire Champion.
Flat Italian Tripoli ....	Sept. 1	Bad	Very much like the Blood Red in shape and colour.
Globe Tripoli .....	Lato	Bad	These two varieties resemble each other both in shape and size. Kinds more suitable for autumn sowing.
Giant Rocca .....	Late	Bad	
Giant Madeira .....	Sept. 3	Bad	A large globular-shaped variety.
James' Keeping .....	"	Good	A nice compact-looking kind, much like Brown Globe.
*Naseby Mammoth ....	Sept. 12	Good	One of the best in this trial; fine for exhibition.
*Nuneham Park .....	" 12	Good	The same as Naseby Mammoth.
Neapolitan Marzagole ..	July	"	An early white variety.
New Queen .....	"	"	Similar to the last-named.
*Reading .....	"	Good	A well-known good variety, but not so large as Naseby Mammoth.
Silver-skinned .....	"	"	Good for pickling.
Two-bladed .....	Aug. 12	"	An early variety of no great merit.
White Lisbon .....	"	Bad	Similar to Silver-skinned.
Welsh .....	"	"	Foliage upright; of no great merit.
White Spanish .....	"	Bad	Good for autumn use.
White Globe .....	"	"	The same as Brown Globe.
White Italian .....	"	Bad	The same as Silver-skinned.
*Harrison's Improved Leicester .....	"	Good	Fine for exhibition, and rather larger than Nuneham Park and Naseby Mammoth.

Those marked with an asterisk (\*) are the best in this trial.

—R. H. D.

#### MYRSIPHYLLUM ASPARAGOIDES.

This beautiful and useful plant is not grown in any quantity as it ought to be.

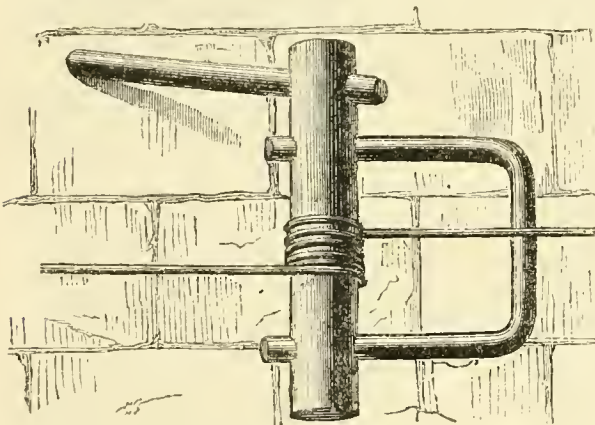
An American friend, who has been in a florist's business in Boston fifteen years, going through the houses here, seeing a batch of this beautiful old favourite, speaks of it as follows:—

"This plant we grow in America by the thousand. I have a house 100 feet long and 20 feet wide devoted entirely to it; and although it grows yards in a few weeks, I have a difficulty to keep up a stock equal to the demand. It is used principally for making wreaths, house decoration, mixing with cut flowers, ornamenting the hair, trimming ladies' dresses for balls and parties, and is never sold for less than a dollar per yard. It is of very easy culture in a cool greenhouse or conservatory; it will grow yards in a few weeks from the time of sowing. It is planted in boxes or pots. Small twine is placed for it to cling to. It is very much admired here, and I hope before this is in print that I shall have thousands of it for decorating purposes." It is many years since this plant was introduced into England, but like many more old favourites it is cast away to make room for the newer and less useful.—H. COMLEY, *Hendre Gardens, Monmouth.*

[We quite agree with our correspondent. It is many years since we saw its white flowers adorning a conservatory in winter. It is a native of the Cape of Good Hope, and was cultivated in this country as long ago as 1702.—EDS.]

### THE MARMORA RAIDISSEUR.

FRUIT-TREE walls are now so frequently wired for convenience of training, as well as to prevent the brickwork being pitted with nail holes, that a cheap and efficient raidisseur or wire-strainer is sure to meet with extensive adoption. There are many such contrivances in use at the present time, but one of the simplest and most effective is that invented by the Abbé Marmora some years ago, and figured and described in the "*Revue*



The Marmora Raidisseur.

Horticole" and other French gardening periodicals. As will be perceived on reference to the engraving, it is on the same principle as the capstan. One end of the wire is passed through a hole in the middle of the capstan, which is in fact a small iron cylinder, and made fast to a hook in the wall. The wire is then unrolled and its other end fastened in the same way; the capstan is then moved to the centre of the length, and two pieces of iron wire, as thick as a quill and 8 inches long, used as levers, serve to turn the capstan and roll on it the wire from each side. When the wire is tightened-up one of the levers is left in its hole, the far end resting against the wall, or the U-handle against the strained wire, as a stop to prevent unwinding. For espaliers an S-shaped capstan is used, and the wire having been first passed through posts at the requisite distance apart, is carried through the hole in the capstan, and tightened-up by turning the two ends. When this is satisfactorily completed the ends of the capstan are placed vertically against the post to prevent the wire unrolling. A still more simple form of this wire-strainer consists in doing away with the bent handle, represented in the figure, and retaining the capstan alone, which in this case is made to turn in the grip of two hooks driven into the wall a short distance apart, or of one double-clawed hook.

### GARDENERS AT THE ROYAL PALACES.

In answer to a correspondent, "C. TORRENS," we have very little doubt that in fact there were gardeners, because there

were gardens, attached to the royal residences soon after the establishment of the Norman dynasty.

In the "*Liber Niger Domus*" of Edward IV. (1461-1483) are detailed the duties of the various officers of the royal household, and among them that the "Serjeant of the Confectionary" had the care of "dates, figges, raisounes, wardenes, pears, apples, quinces, cherries, and all other fruytes after the seasonne." He was to take care that there was a sufficient supply "had of the King's gardynes, as cherries, peares, apples, nuttes greate and smalle, for somer season, and for lenten wardenes, quinces, and other." So there were royal gardeners then. In the "Privy Purse Expenses" of Elizabeth of York, afterwards Henry VII.'s queen, in the year 1502, mention is made of "the keeper of the litle gardyn at Windsor." Baynard's Castle, London, was also then a royal residence, and one entry is "to Walter Reynold, keeper of the garden at Baynardes Castle, for his wages for a hole yere ended at Michelmas last passed, sixty shillings and ten pence." We may reasonably conclude that "gardening and gardeners" benefited the community two centuries earlier, for from a MS. of cookery, written early in the fourteenth century, possessed by the Royal Society, we learn that there were served to table various preparations of (we retain the spelling) lekes, onions, cabaches, rapes, gourdyes, green pesen, parsell, sage, savoray, ysopo, chebolles, mynt, peletur, costmaryn, fenell. At that time our grocers' currants were called "raisyns of corance."

Descending lower in the order of time we find mention of a gardener named Woolf, and Gough the antiquary says that he was a French priest. Henry VIII. (1509-1547) sent him to travel on the continent for the purpose of acquiring a better knowledge of gardening, and it is recorded that he brought back various varieties of fruits and vegetables. He was probably gardener at Windsor, for we find in the "Privy Purse Expenses of Princess Mary," in 1536, that "Jaspar was keeper of the garden at Newhall," or Beaulieu, as it was also called, another royal residence in Essex, and a "Frenche gardener at Westminster," probably St. James's, and this might be Woolf before mentioned. She also mentions "the keeper of the King's garden at Grenewiche;" he brought her "herbes and flowres," and on which occasion she gave him 2s. Mention is also made of "the Qwene's gardener at Hampton Court," and another entry shows that his name was Chapman, and that he carried Pears to Princess Mary; but six years later the gardener's name was Edmund, and he received 5s. for the Strawberries he brought.

Queen Elizabeth (1558-1603), among "artificers," in her pay had a "maker of hearb-bowes and planters of trees," his fee being £25. Her "gardiner" at St. James's fee was £9 2s. 6d.; at Hampton Court, £8 1s. 8d.; at Chelsea, £6 1s. 8d.; at Eltham, £11 11s. 4d.; at Greenwich, £7 4s. 2d.; at Richmond, £4 11s. 3d.; at Windsor "the keeper of the garden under the Castle," £4; and at Woodstock, £3 0s. 10d. Besides these she had in pay many keepers of parks and other appurtenances of her very many residences, among which it now reads comical that there was in "Maribone, keeper of the howse, Covent Garden and the woodes," his fee was £10.

We have before us an original order for the payment of Queen Elizabeth's gardener at Hampton Court. It was at the close of her reign, and the wages were higher than just named.

"MY VERY GOOD LORD,—This hearer, John Dinye, her Majesty's gardiner at Hampton Court, to whom her Majesty hath granted a Privy Seal of two shillings by the day for himself and tenpence for his man, hath continued in daily employment there from the feast of the Birth of our Lord God last past, until the feast day of the Annunciation of our blessed Virgin Mary then next following, which I am from time to time to signify to your Lordship. And therefore I pray your Lordship that upon this my certificate he may receive his pay due unto him accordingly. At the Court at Whitehall this 27th of March, 1601.

"Your Lordship's very assured kinsman and friend to command,  
"NOTTINGHAM."

In King James I.'s reign (1603-1625) it puzzles us to discern why Alphonsus Fowle, keeper of St. James's garden, had £160 yearly, whilst Edward Lonnell, keeper of the garden and orchard at Richmond, had only 49s. 4d.

### OGSTON HALL,

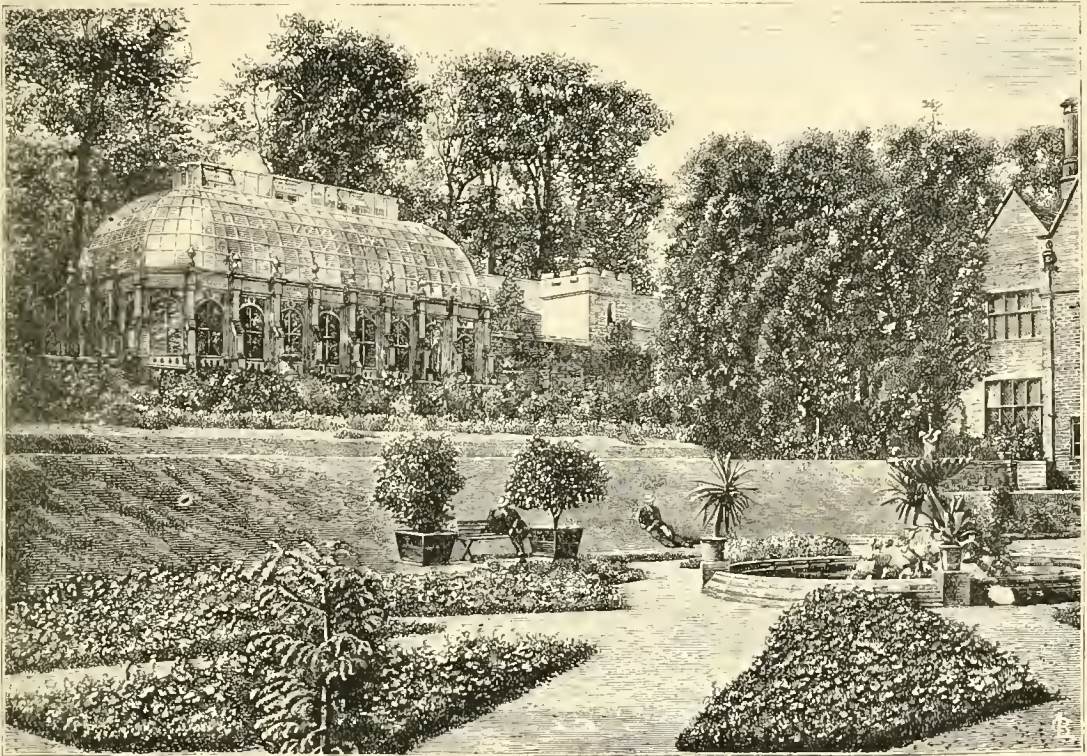
THE RESIDENCE OF MRS. TURBUTT.

FOR natural scenery there are few English counties which can vie with Derbyshire. It does not present the soft rural landscapes of many of the more southern parts of the country, the thatched cottages nestling in the valley, or clustered round

the white-towered church, and forming a little village where all bespeaks a peace and comfort a closer inspection but too often proves to be imaginary; no, on the contrary, Derbyshire scenery is of a bolder, wilder character, and as we travel northwards into the Peak district it becomes even majestic. From hill and dale and rapid river we pass to precipitous frowning rocks, foaming torrents tearing madly over their broken stony beds, dense woods, and wide moors, which when the Heather is in blossom are grand examples of Nature's colour-pictures. Although the natural features in the Alfreton district are not nearly so striking as those between Matlock, Buxton, and Chesterfield—where, too, there are numerous gentlemen's seats, foremost among them being Chatsworth and Hardwick Hall, belonging to the Duke of Devonshire—still the country offers many beautiful views from the ridges which rise up towards the hills. Capping one of these emi-

nences, and at a considerable elevation, is Ogston Hall, a handsome stone-built mansion, which as it at present stands may be considered an entirely modern mansion, having been in a great measure rebuilt by the late Mr. Turbutt, who was the principal landowner in the neighbourhood. At one time we believe it belonged to Sir Joseph Banks, but more of its history we are unable to say.

Adjoining the mansion is the handsome architectural stone conservatory seen in our engraving,\* and which forms, indeed, the most important feature in the garden at this season. It is 46 feet long, 22 feet wide, 24 feet high, and is furnished with excellent taste and effect. Occupying a vase in the centre is a handsome plant of *Dicksonia antarctica*, and on the pedestal are grouped Chinese *Primulas* literally masses of bloom. Other groups of the same flower<sup>2</sup> are placed here and there, and these with *Camellias*, *Epacris*, and *Cinerarias*<sup>3</sup> give an



THE CONSERVATORY AND FLOWER GARDEN AT OGSTON HALL.

agreeable glow of colour to a house in which the green is not, as is often the case at this time of year, the predominant hue. Among other plants, besides Orange trees, *Cordylines*, *Lomaria gibba*, and *Chamerops humilis*, one of a good pair, of which the fellow was in another house, there were excellent specimens of *Aphelexis humilis*, *Polygala Dalmaisisana*, a *Pleroma*, &c., which figure at the summer exhibitions of the district. *Rhododendron Edgeworthii*, one of the most fragrant as well as the most beautiful of the Indian *Rhododendrons*, here blooms freely; the plant, though not large, having generally from twenty to thirty blooms, and perfuming the whole house. Mr. Reynolds finds that it is necessary to keep it rather confined as regards pot-room, otherwise its tendency is to produce wood instead of flowers. It may be added that the plant is now showing indications of again flowering freely. Opening out from the conservatory is a small fernery, containing several good specimens of greenhouse Ferns of moderate size.

South of the terrace, in front of the conservatory and of the house as well, is a neatly-laid-out flower garden on grass, with beds converging towards a fountain in the centre, separated from each other by pathways of Derbyshire spar; and this again overlooks the croquet lawn, from which the ground slopes down to the lake, and a picturesque wooded valley beyond. Belts of shrubs, chiefly *Rhododendrons*, form the set-

ting of these terrace gardens, and in front of the shrubs in summer, flowers and coloured-leaved plants are ribboned and vandyked. Forming the background and shelter to the whole, as seen in the engraving, are lofty Elm, Beech, and Oak trees.

The kitchen garden is of no great extent, being less than an acre within the walls, and including an orchard there is perhaps as much outside; but it is remarkably well ordered. The paths are all asphalted, and in a pouring rain were clean and—well, not dry as one would be apt to say—but for walking practically so, and defined by a neat, dwarf, narrow, Box edging. The soil is light, apparently a decomposed sandstone, resting on the rock, and suits vegetable crops well, especially early ones, and fruit trees tolerably well, but the ground is very shallow in places. The wall trees are well managed; and some espalier Pears in front of the west-aspect wall border trained on high iron fencing are excellent examples of that mode of training, and very satisfactory in regard to production as well.

The extent of glass is but small. There is a small Peach house, forming a lobby to the vineries, of which there are two lean-to's 24 feet by 16, one used as an early, the other as a late house. In the early division, besides the Vines were *Azaleas* and *Rhododendrons* to come into flower at Easter, likewise

\* From a photograph by Mr. Clark, of Matlock.

a number of pots of *Lilium speciosum punctatum* and *album*, with which Mr. Reynolds, the gardener, is very successful; re-potting the bulbs in November in peat, loam, and silver sand, placing three in a 9 or 11-inch pot, from which he obtains from twenty to thirty flowers, which render the conservatory extremely gay at the end of summer. In the late vinery there were some excellent Muscats hanging, though the best bunches had been cut, and Alicante was in good preservation. Some bedding Calceolarias had been removed thither, though Mr. Reynolds did not approve of the practice, as they are far more healthy and free from insects in frames; but there the mice attacked them and cleared off row after row, so that they had to be removed to the only available place of safety. In a span-roofed stove were good plants of *Maranta zebrina*, *Stephanotis floribunda*, *Cypripedium insigne*, *Dracena terminalis*, and some others; but the Poinsettias, with which it had recently been very gay, were nearly over; not so that useful plant *Euphorbia jacquiniæiflora*, which was still in beauty. A lean-to orchard house, 33 feet by 12, is found very useful for a variety of purposes, as well as yielding an abundance of fruit. The practice is to plunge the pot trees out of doors when the wood is nearly ripe, and to plunge them in-doors when about to come into flower. For top-dressing, horse droppings and loam are applied when the trees are turned out, and when this dressing disappears horse droppings alone. Some small Pear trees planted out in the back border had borne well, especially Marie Louise.

We have only to add that the management of the place was highly creditable, especially as Mr. Reynolds has, besides the garden, the home farm of some eighty acres to look after.

#### NOTES ON VILLA AND SUBURBAN GARDENING.

VERY much of the pleasure of a garden will depend on the manner in which its walks are formed. A walk that becomes cloggy or slimy in wet weather or after frosts, or allows the water to lodge upon it during and after rains, and has a surface of coarse and harsh or loose materials, will do much towards deterring persons from using their gardens constantly, or at least will rob them of a good deal of enjoyment. Dryness can be obtained in a walk by shaping the ground properly in forming it, by rounding it slightly in the middle, by giving it a decided fall in some direction, and placing gratings and places for water at the lowest points, and by using suitable materials both for the foundation and the surface. In the ground formation of a walk a firm bottom should be obtained, and it should be pared as smooth as possible, keeping it from 3 to 6 inches higher in the centre, according to its width. At both sides the ground should be sloped gradually down for about a foot or 18 inches in width to the extreme margins, where it may be 6 or 9 inches deeper than at any other part. These extra cuts at the sides are to be filled with rougher materials, and to follow the general inclination of the walk for the purpose of drainage. By laying the groundwork of a walk thus high in the centre, and smoothly sloping to a kind of drain at each side, the utmost possible dryness will be gained.

The first operation on land will be to thoroughly drain it. No description of ornamental or useful plants will thrive well upon undrained ground that is not naturally dry and open, nor can such land ever yield any permanent enjoyment and comfort. A cold damp soil is decidedly uncongenial to both animal and vegetable life. Drainage is not merely valuable in the removal of stagnant water, which is so injurious to plants and so productive of discomfort; it also has the direct effect of making the soil warmer, and admitting air and gases freely. The temperature of ground that is saturated with water can never be greatly increased by whatever power of sun it may be acted upon, nor can air circulate properly through a liquid medium. Warmth and air to the roots being therefore essential to the healthy growth and fertility of plants, drainage becomes of the highest consequence in soils that are naturally wet.

In the greenhouse and pits proceed with potting plants for bedding-out. Calceolarias and other softwooded plants that require it may also be potted, taking care to drain the pots well. The propagation of plants for bedding-out may now be proceeded with, according to the number required; but clumps should not be kept shabby for the want of a few plants, as they are readily propagated at this season. For cutting-pots I generally use 48's prepared in the following manner: Over the hole at the bottom I place an inverted 60-sized pot, and round it potsherds broken small, over these some moss, and then fill-up with a compost of peat, sand, and leaf mould in equal quantities, leaving about half an inch of white sand at the top, which runs into the holes as the cuttings are inserted. A stock of pots thus prepared should be kept in a frame or propagating house, as nothing is so injurious to cuttings taken from plants growing in heat as to put them into cold soil. Cuttings cannot

be too short if they have the necessary buds to form a plant, neither can they be inserted too shallow if they are made firm in the pots.

Trenching vacant ground in preference to digging should at all times be practised if time permit. The amateur should endeavour to get the whole of his garden trenched over once in the course of three years at the farthest. He should go to the very bottom of the surface soil, taking care not to bring up the surface soil; this should be loosened with a fork deeply, and left in its place.

In the Vegetable department sow either on a slight hotbed or in pans the first crop of Seymour's White Celery, and some early Cauliflower, also a small crop of Impregnated Early White Broccoli. If the crops before recommended are not sown, no time must be lost in getting them in. Make your first sowing of Marrow Peas, also put in the last crop of early ones. Spinach, Lettuce, Radishes, both long and Turnip-rooted; Dutch Turnip, and Early Horn Carrot if wanted early, must be sown without delay. A good breadth of early Potatoes must be planted, and get the ground ready for Carrots in the early part of the month.

The first thing to attend to in the out-door planting is trenching the land. This must be done to a considerable depth, say about 2 feet or 30 inches. If an orchard or a flower garden is to be laid-out for the first time, the general drainage must be looked to before success can be hoped for; but if a new bed is only contemplated, or the planting of a single tree, the soil must be well disturbed, and if the subsoil is inclined to retain wet an artificial drainage of bricks and stones is desirable. The digging must also extend much beyond the hole necessary for admitting the roots of the tree. The further this is done the better, as it is often the case that the surrounding soil has not been disturbed for some time, and roots placed in a hole encompassed by such a hard mass will not ramify, but will be similarly situated with those in pots. Trees and shrubs should always be planted high to counteract the evils arising from unsuitable subsoils, and also to allow the air to get at the roots. People seem to think that, provided the stem appears above ground, it matters nothing where the roots are, and we often see newly-planted trees covered-up to the stem with paving stones or gravel. The nearer the roots are to the atmosphere, and the more porous the soil above them, the better. In the matter of roots the smaller ones should be carefully preserved, arranged round the tree as much as possible, and kept near the surface. It thus appears that in transplanting care should be taken to preserve the bunches of roots and fibres, which are too often torn from the stronger roots and left in the ground. It is to be lamented that even in some nurseries too little attention is given to this matter, for we often see trees sent out with only a strong stick of old roots attached, all that was really valuable having been cut or rent away. The remedy for this unworkman-like treatment is for amateurs to be more knowing on such matters themselves, and to refuse to purchase trees which are so roughly treated. Firmly tread-down and water, and your work is done, always remembering to keep a watch as to drought during the first months of spring and summer.

The seeds of all hardy and half-hardy annual plants should now be sown in their respective stations, some in the open ground, some in pots, some in cold frames, and some in a slight hotbed. Finish pruning all kinds of deciduous trees and shrubs which are not done. Attend principally to spring flowers, which are, perhaps, the most cheering which a garden can afford on account of the pleasing associations generally connected with them.

The amateur will find it interesting to note annually the time when his favourite plants come into flower, and when particular trees are leafing; and a series of well-authenticated facts on points such as these would not be without their use to professional gardeners.—W. KEANE.

#### DOINGS OF THE LAST AND PRESENT WEEKS.

ONE of the most important matters connected with a garden is the water supply. In districts where the rain-gauge registers over 24 inches in the year, watering out of doors cannot take up very much of the gardener's time. 1873 was not considered a dry season, and our rainfall was only 21.60 inches; in some seasons it has not reached 20 inches, and the soil being naturally dry it is highly necessary to water both flowers and vegetables out of doors, and if rain water can be obtained for this purpose so much the better. At all events it is of much importance to have it for watering pot plants, especially for Heaths, Azaleas, Camellias, and others of a hardwooded nature. When the hot-houses were built at Loxford tanks were made at the same time to hold all the rain water that might fall on them, and so large has been the provision made that it is seldom necessary to use other than rain water for the plants and the Vine borders. There is a little extra expense when the houses are built, but this is more than compensated by the convenience afterwards. For instance, when a vinery is built it is necessary to go down at least 4 feet for the foundation of the walls, in order to allow of a foot

for drainage and 3 feet for loam, &c. If it is a high lean-to vinery the back wall must be 11-inch brickwork, and to make a sound tank at the base of this wall a little extra expense will be incurred in the first instance by carrying-up the inside 4½ inches in cement; the rest of the wall may be mortar. Another wall of 4½-inch work may be carried-up parallel to this, and at the distance of 2 feet 6 inches all the length of the house. The tank must now be thrown into divisions by walls of 4½-inch work, which will strengthen the other wall, and be more convenient for dipping-up the water. The cross walls should be about 6 feet apart; and as one tank is filled from the roof the water will overflow into the next, and so on until all are filled. The same arrangement should be made in all houses, so that plenty of rain water can always be dipped up. The insides should be coated over either with Roman or Portland cement. It would also be a great boon to gardeners if underground tanks could be made to receive the water that ran from walks or from other hard surfaces in the kitchen garden. It is a great convenience to have water laid-on by pipes from waterworks, or from a raised tank where the water has been pumped-up by some means, but it is well to bear in mind that no pump water is so good as rain water. The barometer had been falling for the last few days, and rain began on Thursday; it rained heavily on Thursday night, and on Friday morning the rain-receiver contained 0·65 inch of rain water. This was very acceptable to fill the tanks, as well as beneficial to newly-planted shrubs, which were suffering from drying east winds.

#### KITCHEN GARDEN.

The ground was in good order for planting, and as there were evident signs of rain the second early Potatoes were put out. There is no better sort than Dalmahoy for the second crop. The White Don is also good, but it is more susceptible of disease. Pricked out Cauliflower plants from seed-boxes into others, and removed them again into a cold frame. The plants that have stood the winter in hand-lights are looking well; some that were wintered in boxes will be planted out during the week. It is a good plan with these as well as other tender plants to draw a deep drill with a hoe and to plant in this; the plants are thereby sheltered a little from cold winds. Put the plants out about 2 feet apart each way.

Endeavour by all means to maintain a supply of good *salad*. Besides Lettuce, which was planted in a sheltered position in autumn and is now making good progress, a sowing was made under glass early in February, and the plants will be ready to go out in two or three weeks. Radishes under glass are in a forward state. Sowings must now be made for succession. Mustard and Cress may also be sown out of doors, but if there is convenience it is better grown under glass as yet.

Sea-kale may be covered with pots, and some fermenting material placed round them will be necessary to force it in quickly.

#### FRUIT AND FORCING HOUSES.

*Vineries* now take a large share of attention. In our earliest houses the Grapes are flowering. This is a very critical time, as the fruit does not now set so readily as it does in May. It is a good plan to go over the house twice a-day and gently shake the laterals, at 10 A.M. and 2 P.M. This serves to distribute the pollen. Another source of danger is to be found in the ventilation. During the present month east winds blow keenly, and at the same time the sun has a powerful effect upon the glass. There is thus a choice of two evils—the leaves being scorched on the one hand, or the Grapes becoming injured by rust on the other; both, however, may be avoided by skilful management and unremitting attention. Should red spider appear on the leaves, it is better to wash them by hand with a sponge dipped in soapy water. Sulphur applied to the pipes sufficiently strong to kill the spider, will certainly cause the Grapes to become rusty; when the berries are near the stoning period there is not then so much danger of this. When the fruit is setting, water should not be allowed in the evaporating-troughs. Damping the walls and paths of the house twice a-day will be enough at this time.

*Peach Houses*.—The growing shoots in the earliest house should be tied-down to the wires, and by all means avoid overcrowding; in most cases one leading shoot and another trained-up from the base of the last season's wood will be enough. No greater mistake can be made than to grow a thicket of wood which has to be cut-out at the winter pruning. The house may now be kept at 65° at night, with a rise of from 5° to 15° more in the daytime. There will be no red spider on the trees if they have been syringed daily with rain water which has been allowed to stand in water-pots over the hot-water pipes to become warmed before using it. We do not approve of using manure-water for Peach and Nectarine trees; but if the border is not rich, as Peach borders ought not to be, the surface may be dressed with manure to which a third part of loam has been added. This encourages the roots to come up to the surface, and all waterings from the syringe or otherwise wash the nutriment down to the roots.

*Figs in Pots*.—It is only in very large establishments that a house is entirely devoted to the culture of Figs; but where this

is the case the atmospheric conditions are similar to those recommended for Vines. A few trees in pots can be grown in any garden where there are suitable glass houses, and they succeed best when placed near the glass and freely exposed to the light. In such a position, if the fruit is required early, a night temperature of 70° may be maintained after the trees have started into growth. A high temperature before growth has commenced will cause the fruit to drop off. Water freely at the roots, and syringe the under sides of the leaves to destroy or keep red spider in check.

*Desert Oranges*.—The trees have passed through the flowering period, and the fruit seems to have set well. At the time of flowering, a dry atmosphere and a temperature of 65° are the most suitable for them. When the fruit has set, syringe the trees daily. The only insect enemy that attacks our trees is the brown scale, and the only way to cleanse the trees from this pest is to wash it off with a sponge and soft soap dissolved in warm water. The trees ought to be thoroughly cleansed from it, otherwise the leaves cannot be kept clean, or the trees maintained in health.

#### STOVE AND GREENHOUSE.

This is a trying month for tender stove plants, owing to the exceedingly changeable weather; drying winds and bright sunshine injure the delicate fronds of Ferns and young growths of plants. Instead of giving too much air it is better to put-up the shading, which ought to be attached to a roller, so that it may be readily rolled up or let down at pleasure. Caladiums which had been wintered underneath the stage had started to grow, and were taken out, watered, and removed to the Pine house. They will be turned out of the pots and repotted in a few days. Gloxinias, Achimenes, &c., should be started into growth now; the pots to be placed near the glass. The greenhouse or conservatory should now be gay with flowering plants. The principal work has been removing Hyacinths, Lily of the Valley, &c., that have gone out of flower, introducing a fresh supply, and re-arranging the plants. Tying and training the growing shoots of *Lapageria rosea* and *alba*; the latter is the stronger grower, the growths must be trained before they twine into each other. Camellias that have finished flowering should be placed in a hothouse or vinery at work to make their growth. If they make their wood early they will flower proportionably early next year. This is the only way to obtain early flowers, as the Camellia will not bear forcing to bring the plants early into bloom.

#### FLOWER GARDEN.

The zonal *Pelargoniums* have been in boxes longer than usual. It is better to pot them off in the autumn. In our case want of space was the reason they were not potted at that time, but we have now finished doing so; keeping the house close for a few days, and a little heat in the pipes, serve to start them into growth. Boxing-off *Verbenas*, *Ageratums*, and a few other bedding plants which succeed better in boxes than they do in pots. We also put in cuttings of *Verbenas* of which there is not sufficient stock. Many persons are very careful to make their cuttings of *Verbenas* at a joint, and this necessitates cutting over the plant lower than is desirable, whereas it is not at all necessary, as the cuttings will strike roots and form plants if there is no joint under the surface at all. Planted out the first lot of *Gladiolus*. Seedlings which had been grown in pots were watered after the leaves had died-down in the autumn, this caused them to start into premature growth; they were placed in boxes and removed to a house where they were kept cool, but from which severe frost was excluded. Some sandy loam has been placed round the roots.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

J. Coombs, The Ferns, Enfield, Middlesex.—*Catalogue of Cuttings of Geraniums, &c.*

F. & A. Dickson & Sons, 106, Eastgate Street, Chester.—*Catalogue of New and Select Farm Seeds.*

George Poulton, Fountain Nursery, Angel Road, Edmonton, London, N.—*Catalogue of Dutch Flower Roots, Vegetable and Flower Seeds.*

#### TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOILER (*Brooklands*).—Write to the maker, and ask where you can see it in operation, and any other particulars you require.

GLASS CUTTER (*J. L., King's Road*).—Having tried it ourselves we can testify that you are mistaken.

PRUNING VINES (*Robert Hughes*).—The system upon which your gardener has pruned your Vines is quite correct. It is what is known as "the close-spur" or "single-rod" system. You will find that from every spur shoots will be emitted, and all you have to do is to encourage the strongest by rubbing-off all the weaker ones.

RATING MARKET GARDENERS' GLAZED STRUCTURES (*J. A. P.*).—We are of opinion that they are not rateable. All that we can say on the subject we said in our No. 622, page 183.

VINES AFTER PLANTING (*Amateur*).—If you have not yet planted the

Vines we should not do so until they had made shoots an inch or two long, but keep them in the house with the soil moist, and instead of pruning rub off the eyes, so that when the Vines are planted shoots will be produced at the bottom of the rafters, or where you wish for side shoots, at which point we should leave three shoots—two for spurs, and one to train-up for the red. In planting, the roots should be disentangled and spread out, whether you plant now or after the eyes have broken. In the latter case the Vines should be shaded for a few days and watered. The temperature for the first month may be 50° to 55° at night, and 65° by day; for the second month 60° to 65° at night, and 70° to 75° by day, on which a rise of 10° to 15° may be allowed with sun and air.

**PLANTING JERUSALEM ARTICHOKE (A Subscriber).**—We fear your north border deprived the plants of sun and warmth needed for their full maturation. Give them an open and sheltered position, and a light soil if possible, well dug and moderately manured, and plant in rows 2 feet apart, the sets 9 inches or a foot from each other, and 6 inches deep. Plant at once. Last season was not a favourable one, but we attribute your non-success more to the position than the season.

**BULBS FROM JAPAN (Tom Mason).**—A compost of equal parts light fibrous loam, sandy peat, and leaf soil, with a sixth part of silver sand, will no doubt be suitable, as it is for most bulbous plants. We should pot them so that the bulbs would be covered with soil level with their crowns, and, if there are any Lilliums, so that the pots may not be more than three parts filled with soil, to allow of the plants being top-dressed after they have made shoots a few inches long. They should be placed in pots, which should be drained efficiently, and in no case need exceed three times the diameter of the bulbs. The soil ought to be kept just moist until growth fairly commences, and then water more freely, but be careful not to water over the bulbs, especially not until they are well started into growth. Afford them a light airy situation. They will succeed in a greenhouse.

**VINES FOR SMALL VINERY (Alipuis).**—Your house being heated so that you can command a good temperature, and having also a pipe in the border, you may plant, as you propose, Duke of Buccleuch, Muscat of Alexandria, and Lady Downe's; but the first will succeed in a temperature much lower than is required for Lady Downe's, which we should omit, and have Madresfield Court.

**SOWING ALTERNANTHERA AMGENA AND COLEUS (An Old Subscriber).**—The Alternanthera is not difficult to raise from seed when this can be secured. The Coleus may be sown in pots filled to within three-quarters of an inch of the rim with sandy loam and leaf soil, two-thirds of the former to one-third of the latter, adding a sixth of silver sand, and making the surface fine and even; then scatter the seed regularly, cover about an eighth of an inch deep with fine soil, place in a hotbed, and keep moist, being careful not to overwater or the plants will damp-off. Keep near the glass, and when large enough to handle pot-off singly, return to the frame, keep shaded from sun until established, and shift into larger pots as the roots reach the sides, removing to the greenhouse in June, and hardening well off.

**DWARF LOBELIA—WHITE-FOLIAGED PLANT FOR CARPET-BEDDING (Idem).**—There is no dwarfier blue Lobelia than *pumila grandiflora*, which though not so deep a blue as some of the taller sorts, is nevertheless good. A dark blue sort is Brilliant of the speciosa class. Carter's Cobalt Blue is a clear pure blue. *Antennaria tomentosa* is one of the best white carpet plants and hardy, as is *Cerastium tomentosum*. The latter we consider best for your purpose.

**SOWING NERTEA DEPRESSA (R. S.).**—The red capsules should be opened and the seeds scattered over a pot well drained and filled to within half an inch or so of the rim with fibrous loam, sandy peat, and a little leaf soil, making the surface very fine and even. Just cover the seeds with very fine soil. The soil should be watered before sowing the seeds. Place in a greenhouse, and cover with a hand-glass or a bell-glass, but it ought to be slightly elevated. Keep moist, and to lessen the necessity for watering, shade from bright sun. The soil ought to be moist. When the young plants appear admit air by raising the glass, and increase it with the growth, removing altogether in a short time, the main thing being to keep the plants from being dried-up, and, on the other hand, not soddened with wet. We should be glad if you would send us a few capsules. The *Ouvirandra fenestralis* would not have sufficient heat, we fear, in a warm sitting-room, but we should be disposed to give it a trial if you can command a plant without any great outlay. It would be a most interesting subject for a sitting-room, and if you succeed we should be glad to hear of it.

**GLASS FOR ROOF CONSERVATORY (J. C. B.).**—Rough plate glass is good and prevents scorching to a great extent. We use plate glass polished and ground on the side placed interiorly, and not so treated on the outward side. It answers admirably, but is more costly than rough plate. The ground glass is a quarter of an inch thick, and the rough plate ought not to be less. Ours is half an inch to five-eighths of an inch.

**ROSES OF 1873 (J. W. B.).**—It is impossible to give a reliable opinion on them yet. We do not know what you mean by "stopping Briars to prevent their dying-down below the shoot."

**SOILS (Croy).**—Either would do for potting if mixed in due proportions with other materials suitable to the plants to be potted.

**SUTTON'S RED-SKINNED FLOURBALL POTATO (Sicklinghall).**—It is a late round sort, good cropper, of good quality. You will find a coloured illustration of it in Messrs. Sutton's "Farmer's Year-Book."

**PLANTS FOR EXHIBITION IN AUGUST (Young Exhibitor).**—The *Dracophyllum*, *Pimelea*, and *Kalosanthes* you will need to retard, keeping them as cool as safety permits until June, when you may make an awning of tiffany to shield them from heavy rains and shade them from bright sun by day; but let them be exposed at night, unless heavy rains prevail, when covering should be placed over the plants. The *Heaths* will need to be kept back in the same way. As your house receives but little sun in summer it might be shaded and air freely admitted; thus you may keep them back nearly as well as out of doors. Keep the *Polygala* in heat until the growths are complete, and then remove to the cool house. It will flower when you wish it, but may need to be placed in a gentle heat again a month before the show. The *Erythraea* should be started early in April and be grown in a light house. *Valloia* should be placed in heat now, so as to get the growths forward, and by the middle of June it should have a light airy position in a greenhouse, giving no more water than will keep the plant from flagging. By introducing the plants into heat you may flower them when you wish, or they may not require forwarding. To have plants in flower at a stated time requires considerable judgment. No decided instructions can be given without seeing them, their present condition being everything.

**PLANTING LILIUM LANCIFOLIUM AND AURATUM (Horton).**—Pot them at once in a compost of equal parts of fibrous loam, leaf soil, and sandy peat, with one-sixth of silver sand. After draining the pots efficiently place an inch of the rougher parts of the compost over the drainage, and three parts fill the pots with the compost thoroughly mixed and made fine but not sifted, and then introduce the bulbs, placing some silver sand under and around them, then make level with the crown with soil, pressing the latter gently round them. Place in the greenhouse and keep moist, increasing the supply of water as the growth advances, and afford the plants a light airy position near the glass, allowing for growth. Top-dress the plants when they show roots, as they will just above the bulbs on the stem, adding a fourth of well-rotted manure to the compost above named, bringing it level with the rim of the pot, but allowing a little space for watering. *Victoria Aster* we think the finest.

**IVY FOR WINDOW BOX (W.).**—The neatest Ivy, if you wish for a green-leaved sort is *Donerailensis*, and *laurea* is good. The neatest silver variegated is *elegantissima*. The small-leaved variety of *Virginian Creeper* (*Ampelopsis Veitchii*) would answer well; but both it and Ivy would take a time to cover the sides of the box, and would take in the soil, but not so much as to injuriously affect the growth of *Geraniums*, &c.

**FLOWERS FOR A VINE BORDER AND UNDER THE SHADE OF TREES (M. A. B.).**—It is bad practice to grow flowers in a Vine border. The grass habit induced by the rich soil may be avoided by surrounding the roots of the flowers with soil of a poorer description. *Polemonium ceruleum variegatum*, or the Golden Tricolor *Geranium Lady Cullum*, would answer in place of the *Calceolarias*. *Santolina incana*, by its neat, dwarf, and very compact growth, forms an admirable substitute for the *Cerastium*, to which it is really superior. Propagate the *Viola* by cuttings now, plant in the beds in May or June, and it will continue in full beauty till the autumn. *Cheopodium atriplicis* raised from seed sown in March will probably answer well in your climate as a substitute for *Humea*. The tall-growing scarlet *Lobelia*, too, make capital central groups; the dark crimson stems and foliage crowned by bold spikes of a deep, rich, liquid scarlet producing a very fine effect. The old stools are taken up late in autumn and kept in a cool pit or frame during winter, and abundant offsets may be taken any time during the present month. If you are unacquainted with this lovely and important species, do not confound it with the dwarf blue kinds, from which it is totally distinct. There is no flower of the same colour equal to the blue *Lobelia*. Have you tried *L. pumila grandiflora*? Its deep blue flowers are produced abundantly, and its habit of growth is very dwarf and compact. *Vesuvius Geranium* will not answer under the shade of trees; besides, the effect of a line of it next *Beet* would be extremely sombre and heavy, more particularly in such a position. Substitute for it the elegant grey-leaved *Centaurea Clementei* or *C. ragusina*. Do not hesitate to repeat the grey, for it will impart precisely the air of brightness that you require.

**POTATO PLANTING (A. P.).**—The crown cut off, as recommended at page 173, is not to be planted. The cluster of eyes of the crown produce a group of small weak stems if it be planted, that weakens the more robust stems produced from the large eyes.

**VINE ROOTS DECAYED (S. A.).**—We planted a vine in three divisions, and the borders were made up of turfy loam, crushed bones, charcoal, and lime rubbish, with the addition of some rotted manure. The borders were well drained and aired. The first year the Vines grew to the top of the rafters, and the canes were all that could be desired; but what was our surprise to find the second year that many of the roots were dead, and others decaying similar to yours. The third year there was no improvement. In the fourth about 3 inches of the surface soil was removed, and some turfy loam put in its place; the roots eagerly ran into this, and the Vines have done well ever since. The soil you have sent is very similar to that of which our border was made; what we surface-dressed with was of a much lighter nature. Roots similar to yours were forwarded to us from a gentleman about this time last year, and his border had been made on the most approved principles. Probably the soil is too retentive in your case, as it was in ours. You ought to remove 6 inches of the surface of the border, and replace it with some turfy loam of a more sandy character; the turf should be cut only 2 inches deep.

**CAMELLIA—GERANIUM LEAVES (C. L. T.).**—We cannot name the varieties of the *Camellia* or any other florists' flower. The leaves indicate that the roots of the *Geranium* do not supply sufficient sap. Try watering with very weak liquid manure.

**PARTLY OBLITERATED NAMES (J. L.).**—1, *Enfant Ameugny*; 2, *Empereur de Maroc*; 3, *La Ville de St. Denis*; 4, *Monsieur Noman*. There is a Rose called *Gleire de Ducher*, but none called "Ducher" alone.

**NAMES OF FRUITS (L. Holmes).**—2, Golden Winter Pearmain; 3, Claygate Pearmain; 4 and 5, Dumelow's Seedling; 6, Golden Russet; 7, Boston Russet.

**NAMES OF PLANTS (F. E. T.).**—*Habrothamnus fasciculatus*. It is a native of Mexico, and was first bloomed in the Chiswick Garden of the Horticultural Society in 1845.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### BLACK BANTAMS.

Not long ago exhibitors of Black Bantams had, generally, to be content with showing their fowls in the "Any other variety" class, there seldom being any other class in which they could compete, and the consequence was Black Bantams were neglected, and by only a few were care taken in breeding them. But now the committees of most of our poultry exhibitions have allotted a separate class for Black Bantams, with a result most gratifying to the exhibitors and encouraging to the committees. Fowls of this variety which only three or four years ago took prizes at our leading exhibitions would now, if in existence, very often find it difficult to obtain a place at many of the local shows.

In most of our poultry books only a limited space is devoted to the description of these fowls, which description is, in many cases, very scant and without attempting to enter into detail; and it is with a knowledge of this defect in our poultry lore

that I am persuaded a detailed description of Black Bantams will not be unacceptable, to some few amateurs at least.

Black Bantams are of diminutive size, the cock never exceeding, when full grown and in good condition, more than 20 ozs. at the utmost in weight, and the hen weighing about 2 ozs. less than the cock. The plumage of both sexes is of a very rich black throughout. The hackle of the cock is full, the feathers of the saddle and hackle being long, those of the latter flowing well over the shoulders. The tails of both cock and hen are full and expanded, and are carried upright; the cock's tail is adorned with handsome well-curved sickle feathers. The comb, which is double, and fits close and straight on the top of the head, without inclining on either side, is square in front, and is very much more developed in the cock than in the hen. The comb, the top of which is covered over with small points, has a peak behind which turns slightly upwards. The wattles of the cock are rather long, broad, thin, and well rounded on the lower edge, those of the hen being very small and thin. The comb and wattles, as well as the face, are of a bright vermilion colour. The head is small and round, and is carried very erect by the hen; and by the cock is carried well back towards the tail. The beak is rather short and curved, being of a dark horn colour, or black, becoming rather lighter towards the point. The deaf-ear, which is one of the chief points of beauty, has a flat and even surface, without wrinkles, and is of a pure opaque white, free from any stain. The deaf-ear is a beautiful contrast to the rich black plumage and the bright red of the comb, wattles, and face. The carriage of both cock and hen is upright and strutting, the cock being particularly bold and erect, with a very proud gait. The breast is round and prominent, and is carried forward by the cock. The neck of the cock is very taper, and is gracefully curved well back, so as to bring the back of his head into close proximity with his tail. Their legs are short and clean, and of a dark leaden colour, or black; their thighs are also short.

Many exhibitors of Black Bantams confine their fowls prior to exhibiting them in a dark and warm room, which has the effect of increasing the purity of whiteness of their deaf-ears, which are apt to become tinted with red from too much exposure.

There are many amateurs who have not sufficient accommodation to keep the larger breeds of fowls, but who delight in keeping a few Bantams, and to these I could not recommend a prettier variety than the Black. They are hardy, moderately good layers, and the chickens are not difficult to rear.—WALTER B. ARUNDEL.

### OBJECTING TO JUDGES.

YOUR correspondent of last week draws the attention of fanciers to the practice of parties forming themselves into rings or cliques against certain judges officiating at shows, and sending their entries subject to the condition that if a certain judge officiates their entries are to be returned. Such conduct is reprehensible in the extreme. If such conduct were to be followed we should very soon have no judges at all. There are various ways in which such practices can be put a stop to. First, committees should be above cringing to the dictatorial views of any rings or cliques, and appoint their judges fearlessly. Second, as soon as the schedule of the show is prepared have the judges engaged and publish their names along with the schedule. If such simple rules were attended to, shows upon the whole would be better patronised by the true fancier. In this northern part of Her Majesty's dominions there have been several shows where I and others would not enter our birds because the judges' names were not published, and we had not the confidence in the parties who were reported as being engaged to judge. Our surmises were right, for the judging has given general dissatisfaction. I do not think your correspondent need fear that the combinations he refers to are likely to be of long standing, or ever to be acted upon except in isolated places, but I am sure that if the hints I have given were attended to there would be no cause of that fear described by your correspondent.—A NORTH-EAST-COAST-OF-SCOTLAND FANCIER.

YOUR correspondent in his remarks on "Objecting to Judges," in last week's issue, proclaims the existence of a "clique" or poultry exhibitors' league. Will he further enlighten the fancy by stating where such institution exists, and how it may be communicated with? If its *modus operandi* is not aggressive but strictly defensive, and if its council be rightly directed, it may add very materially to the stability of some of our present poultry societies, and ought to be known. I fail to discover the force of your correspondent's argument, or rather I cannot view it from the same standpoint. He complains that the prospects of Mr. A have been destroyed as a judge by the combination of a few fanciers. It must be assumed that this Mr. A has been tried as a judge (or there would be no protest), and his awards have proved conclusively that he does not possess the necessary qualifications of an efficient judge. Few will deny that the sooner such a person passes into oblivion, so far as the

poultry world is concerned, the better, though the result may have been effected by a coalition of the fancy; fewer still will, I think, "act in concert" to utter a wail of plaintive sympathy for the blighted prospects of such a judge with "RESPIERE AD FINEM." If in answer to the "outcry on all sides for more judges" gentlemen usurp the office who are incompetent, and whose decisions subvert those of our most able, popular, and oldest judges, what more reasonable than that a "few individuals should act in concert" for the removal of such novices?

The appointment of judge deserves far more careful attention than it receives at the hands of the promoters of some of our poultry exhibitions. The arrangements of a show may be most honourably and laboriously carried out to their minutest details, but an error in selecting a judge will prove a fruitful source of disappointment and dissatisfaction.

Through the courtesy of the secretaries to the different societies, I receive, being an exhibitor at all the large shows, a schedule of the prizes of the coming exhibitions. My first concern is to ascertain the name of the judge; in some lists this is "conspicuous by its absence," I therefore consign such, without further ceremony, to the waste-paper basket.—PRO BONO PUBLICO.

I AM glad to find that a letter has been written to your Journal complaining of the errors of those who object to certain judges. It appears to me, that so long as the names of judges are hidden from the public and exhibitors until the exhibition opens, so long is there just reason to object. There is a very great deal of annoyance and dissatisfaction caused by the names of judges not being known to the intending exhibitor at the time the entries are made. I have been a large exhibitor for many years, and I certainly do most strongly protest against committees not advertising the judges' names on their prize schedules. For instance, we have all our likes and dislikes, and I have often seen birds that have received the cup in their class at one show under one judge, at the next show passed by unnoticed by another judge. Considering the enormous charges railway companies levy upon all exhibitors for carriage, and the amount of entry fees, I certainly do think it would have a most beneficial effect if every committee published the names of their judges on the prize schedule. I quite agree that a new set of judges is necessary, but I am sure we have several gentlemen who act at present and whose valuable services we could not afford to lose.—A LOVER OF FAIR PLAY.

### DORCHESTER POULTRY AND PIGEON SHOW.

THERE were good shows at Dorchester twenty years ago. They were held under difficulties. They had no convenient place for them. Much zeal and management did contrive to put-up pens in the Meat Market. It was one of the good shows of that time. The Coclins of Essex and Suffolk, the Dorkings of Sussex and Lancashire, the Ducks and Geese of Buckinghamshire met there to compete for the pieces of plate for which the ancient town was famous. It had the reputation of giving things of intrinsic value. And then, like many others, they were given up and became things of the past. "*On revient toujours à les premiers amours.*" The snake was scotched and not killed, and the good old Roman town woke-up one day determined to begin again. It possessed all the requisites for success—good funds, energetic men, and an inestimable fund of experience in the person of Mr. Andrews, so well known as a former breeder and great judge. There was no longer any difficulty. A pretty and commodious building has lately been erected for town hall, market, or general purposes. Spacious, lofty, well lighted, and airy, it left nothing to desire when it was proposed to use it for this Exhibition. It had another great recommendation—the lighting being from above there are no draughts. Its walls are hung with shields and otherwise decorated, and at the extremity a music gallery gave ladies the means of standing and enjoying a very pretty *coup d'œil*. It is a great point, where anything is contrived for public amusement and must depend on the public for support, to start with all necessary appliances. An apology is a bad beginning. The culprit is afraid of the verdict when he applies beforehand for the benefit of extenuating circumstances; and so when one of a body of promoters and managers begins by saying you must excuse this and that, other wants are found or imagined; and the man who is working for others is advised, before he helps to get up another, to go to Bingley Hall or Manchester, or some other great show. He is told he cannot compare with them. They are Callipash and Callippe, while he is calves' head, and

"Calf's head hashed must be confessed  
To be mock turtle at the best."

We have often thought it would be wise to station people at the entrance to a show for the purpose of assuring everyone the place was crowded. Once assured that a place is inconveniently full, gout and corns are forgotten, and babies in arms afford no argument for staying away. "Good wine needs no bush," and Dorchester had nothing to apologise for, or to explain away.

Market-room and town hall were both full of pens, and they were full of good birds. The bow at the end of the room was fitted with large and commodious cages, tenanted by the various Pheasants and wild fowl. The entire flooring of these cages was composed of close-cut turf. A large reserve pile of the same was in requisition to replace any that might be scratched to pieces, or otherwise become an eyesore. The small alcove behind was occupied by three purple-velvet rising shelves, on which were displayed cups, showing that true to tradition they were worth their nominal sum. The Show was crowded, and the *élite* of the county were there. Everyone was glad it was revived, and hoped it would continue. So did we. Our notice of the different classes will be of necessity short. Full information is supplied by the prize list which appears in this number.

The *Game* were very good, especially the Brown Reds that took the cup. In these, as in other classes, there were good specimens from the Channel Islands. We are, however, of opinion that there is a tendency to breed them too leggy. A *jocosus puer* in these classes had perpetrated a joke. Wishing to exhibit five very beautiful tame Partridges, he had entered them in the *Gams* classes. The Coloured *Dorkings* were worthy of any show; the Silver-Greys weak, the White *Dorkings* marvellous; many of the hens weighed over 9 lbs. each, and one cock 10½ lbs. The *Spanish* were excellent, so were the *Cochins*, but the Grouse carried the cup from Buff, White, and Black. There were three pens of the latter. There were forty-five pens of *Brahmas*; the Light took the cup from the Dark. They were good classes, but in many of these, as in the *Cochins*, the feathering is becoming preposterous, presenting a huge mass of fluffy feathering without shape, form, or symmetry. There were fifty-four pens of *Hamburgs*. The Golden-pencilled were beautiful and perfect. Golden and Silver-spangled were very good, but we cannot understand why the Silver-pencilled should have fallen off so much, and should everywhere cut such a sorry figure. We saw among the Silver-spangled that which was common formerly, but very rare now, a henny-tailed cock. *Polands* and *Malays* were competitors for one cup. They were both well represented in every way, but the former were strong enough to take away the cup. We have seldom seen better birds than were shown in these classes. *Houdans* and *Crève-Cœurs* are become poultry facts, but we were surprised to see five pens of good *La Flèche*. Many of the *French* birds were of great size. The *Various* were various and curious. *Game Bantams* had the same number of classes as their larger brethren. They brought between forty and fifty pens, among them some of the best *Duckings* we ever saw. Seventy-three pens of selling poultry, single cock or pair of pullets not exceeding 30s. in value: these are essentially popular classes, they afford an outlet for extra stock, and a moderate but reliable market for purchasers. The sales were very numerous.

*Geese*, *Ducks*, and *Turkeys* were all good.

The entries for dead poultry were had, only one prize was awarded, and we would not give much for the recipients. Much may be made of this class, and it will be done under proper management. Fifteen competitors for three prizes for eggs. This class, again, has a future before it.

The *Pigeons* were numerous, and many of them very good. The Committee were at the Show early and late, and richly deserved their success.

**GAMZ.**—*Black-breasted Reds*.—1, W. H. Stagg, Netheravon. 2, J. Mason, Worcester. 3, J. Voisin, Jersey. 4, E. W. Williams, Herringston. 5, E. Martin, Scitthorpe, Fakenham. *Brown-breasted Reds*.—1 and Cup, F. Warde, West Feilthorpe. 2, T. Lovering, Caprice, St. Austell. 3, J. Browne, St. Austell. 4, F. Warde; H. E. Martin. *Any other variety*.—1, J. Voisin. 2, E. Martin. 3 and 4, E. G. Farquharson, Blandford. 5, D. Thomas, Brecon.

**DORKINGS.**—*Coloured*.—1 and Cup, L. Patton, Hillmore, Taunton. 2, T. C. Burnell, Micheldever, Hants. 3, J. Mercer, Burton Bradstock, Bridport. 4, G. N. Thomas, Beaminster; F. J. De Carister, Jersey. *Silver-Gray*.—1, Withheld. 2, L. Wren, Lowestoft. 3, T. Moore, Yeovil. *White*.—1, O. E. Cresswell, Early Wood, Bingham. 2, Mrs. M. A. Hayne, Kingsand, Devonport. 3, H. Feast, Swansea. 4, P. Knadle, Lostwithiel. 5, Mrs. M. A. Hayne; Mrs. T. Pope, Corsley, Warminster.

**SPANISH.**—1 and Cup, J. R. Roddard, Wington, Bristol. 2, J. Newick, Linton St. George. 3 and 4, E. Jones, Clifton.

**COCHINS.**—*Cinnamon and Buff*.—1, R. Osborne. 2, W. H. Crabtree, Levensham. 3, Mrs. E. Alsopp, Worcester. 4, J. R. Mason, Evershot. 5, Capt. T. S. Robin, Petit Manage, Jersey. *Partridge*.—1 and Cup, G. Lias, Par Station, Cornwall. 2 and 4, Hon. Mrs. Sagden, Wells, Somerset. 3, C. Ingram, Blandford. *Any other variety*.—1, W. Whitworth, jun., Longsight, Manchester. 2, S. B. Perry, Lymington. 3, Mrs. E. Holmes, Bath. 4, C. M. Hole, Tiverton.

**BRAHMAS.**—*Dark*.—1 and Cup, Newham & Manby, Wolverhampton. 2, Horace Lingwood, Creting, Needham Market. 3, J. Mercer, 4, H. W. Castle, Kensington, London; H. Feast; W. H. Crabtree. 5, T. H. Waterman, Andover, Devon. *Light*.—1 and Cup, J. B. North, Cheltenham. 2, T. A. Dean, Marden, Hereford. 3, H. M. Maynard, Holmwood, Ryde, Isle of Wight. 4, C. Jones, Hanford, Blandford; Mrs. E. Holmes; W. H. Crabtree.

**HAMBURGS.**—*Gold-pencilled*.—1 and Cup, H. Moore, Weston-super-Mare. 2, G. Packham, Exeter. 3, J. Robinson, Garstang. 4, C. Bloodworth, Cheltenham; H. Moore; T. Appden, Church, Ayrington. *Silver-pencilled*.—1, J. Rhodes, Hamburn, Ayrington. 2, N. Barter, Plymouth. 3, H. Feast. *Hammocks*.—*Gold-pencilled*.—1 and Cup, Mrs. J. Pattison, Dorchester. 2, T. Walker, jun., Denon, Manchester. 3, J. Robinson. 4, J. K. Harris, Warminster; P. Hanson, Stonehouse, Gloucester. *Silver-spangled*.—1, Ashton and Routh, Broadbottom, Mottram. 2 and 3, Mrs. J. Pattison. 4, N. Barter; J. Robinson.

**POLANDS.**—1 and Cup, J. Hinton, Warminster. 2 and 3, T. P. Edwards, Lyndhurst, Hants. 4, S. C. Probert, Lostwithiel; T. P. Edwards; C. Bloodworth. *Malays*.—1, S. B. Perry. 2, G. White, Christchurch. 3, J. Hinton. 4, Rev. N. J. Ridley, Newbury. 5, S. Routh, Chesterfield; Rev. A. G. Brooks, Shrawardine Rectory, Shrewsbury.

**HOUANS.**—1, W. Dring, Faversham. 2, W. Whitworth. 3, W. H. Copplestone, Bridgend. *Lostwithiel*.—1, Mrs. C. Hall, Fox Hall, Alton; P. J. De Carter, 2, Viscountess Chetwynd, Marpool Hall, Exmouth.

**FRENCH.**—*Any other variety*.—1 and Cup, W. Dring. 2, G. De Faye, Jersey. 3, Rev. C. C. Ewbank, Biggleswade.

**ANY OTHER VARIETY.**—1, W. Wildey, Coaham, Hants (Andalusians). 2, R. S. Woodgate, Penbury, Tunbridge Wells. 3, Mrs. E. Holmes.

**GAME BANTAMS.**—*Black-breasted Reds*.—1, E. Payne, Cardiff. 2, R. Doncer, jun., Arkstone, Poole. 3, W. Bantcher, Notting Hall, London. 4, H. Wingfield, Worcester. *Brown-breasted Reds*.—1, F. Fielder, Southsea. 2, S. & J. J. Stephens, Ebley, Stroud. 3, J. Long, Bromley Common. *Any other variety*.—1 and Cup, Master M. V. Sanford, Dover. 2, E. Payne. 3, G. S. Sainsbury, Devizes. 4, J. Long; W. Boucher.

**BANTAMS.**—*Gold and Silver-laced*.—1, C. H. Poole. 2, Mrs. Hambro, Milton Abbey, Blandford. 3, Withheld. *Any other variety*.—1, B. F. Parrott, Henbury, Bristol. 2, R. S. S. Woodside. 3, Mrs. Hambro. 4, R. H. Ashton, Mottram. **SELLING CLASS.**—*Cock or Cockerel*.—1, Miss E. Broke, Chardleigh Green, Chard, (Spanish). 2, F. L. Turner, Dorchester (Brahms). 3, Mrs. M. A. Hayne (Brahma). 4, A. Martin (Cochin). 5, Mrs. J. Pattison (Hamburgh); A. Martin (Cochin); A. E. Smith, Gosport (Cochin); T. P. Edwards (Poland); O. E. Cresswell (Cochin). 6, Mrs. Neville-Grenville, Glastonbury (Houdan) (2); F. L. Turner (Brahma); Capt. T. S. Robin (Cochin).

**SELLING CLASS.**—*Hens or Pullets*.—1, Mrs. E. Alsopp (Cochins). 2, J. Stuard (Hamburghs). 3, W. T. Lovering (Game). 4, F. L. Turner (Brahms). 5, Mrs. J. Pattison (Hamburghs) (2); C. Bloodworth (Cochins); Capt. Hon. E. Digby, Cerne (Dorking); H. Moore (Hamburghs); T. P. Edwards (Polands) (2); Miss E. Browne, St. Helier's, Jersey. 6, J. Wimbles (Spanish); C. Bloodworth (Bantams); W. H. Dawkins, Wynford, Midsen Newton; Lady E. Thynne, Lavestock, Salisbury (Spanish).

**DUCKS.**—*Aylesbury*.—1, W. Mansfield, Dorchester. 2, Rev. R. Smith, Stafford Rectory, Dorchester. 3, Withheld. *Rouen*.—1, J. Crane, Southover, Dorchester. 2 and 3, T. J. Mercer; Capt. the Hon. E. Digby. *Black East India*.—1, W. Kellaway, Merston Cottage, Isle of Wight. 2, G. S. Sainsbury. 3, W. H. Stagg. 4, Mrs. M. A. Hayne (2); G. S. Sainsbury. *Any other variety*.—1, R. Wilkinson, Guildford (Carolina). 2, Capt. J. W. B. Hawkesworth, Stokeford, Wareham (Peruvian). 3, J. Croote, jun., Wellington, Somerset. 4, W. B. Ford, Weymouth (Muscovy).

**TURKEYS.**—1, L. Patton. 2 and 3, A. Martin. 4, W. Mansfield (2).

**GEES.**—1, W. H. Dunman, Trojtown, Dorchester. 2 and 3, W. Mansfield.

**PIGEONS.**  
**CARRIERS.**—*Cocks*.—1, H. Yardley, Birmingham. 2, J. H. Watkins, Hereford. 3, J. C. Ord, Fimble. 4, B. Ford. *Hens*.—1 and 2, J. H. Watkins. 3, B. Ford; H. Yardley.

**FOUTERS.**—*Cocks*.—1 and 2, H. Pratt, Knowle. 3, Mrs. Ladd, Calne. 4, Rev. W. C. Bullen. 5, J. H. Watkins. *Hens*.—1, H. Pratt. 2, Rev. W. C. Bullen. 3, Mrs. Ladd. 4, Rev. W. C. Bullen; H. Pratt. 5, J. H. Watkins.

**TUMBLERS.**—*Almond*.—1, H. Yardley. 2, J. Andrews, Poole. *Balds or Beards*, or *any other variety*.—1, H. Yardley. 2, G. Packham. 3, B. Ollis, Devizes.

**JACOCHINS.**—1, J. Andrews. 2, H. Yardley.

**BABBS.**—1, H. Yardley. 2, J. H. Watkins.

**FANTAILS.**—1, J. F. Lovelidge, Newark. 2, H. Yardley. 3, Miss S. Dickinson, Kingweston, Somerset.

**NUCES.**—1, J. P. Mills, Exeter. 2, H. Yardley.

**TOURISTS.**—1, G. Packham. 2, H. Yardley. 3, J. Andrews.

**DRAGONS.**—*Silver.*—*Cock or Hen*.—1, 2, and 3, W. Bishop, Dorchester. 4, H. Yardley. 5, W. H. Mitchell, Moeley, Birmingham. *Blue.*—*Cock or Hen*.—1, W. H. Mitchell. 2, W. Bishop. 3, H. Yardley. 4, G. Packham. 5, Yellow. *Cock or Hen*.—1, S. C. Betty, Park Street, Regent's Park. 2 and 3, W. H. Mitchell. 4, S. C. Betty; W. H. Mitchell. 5, R. Shuttler, Baiter, Poole.

**W. Bishop.** 6, W. H. Mitchell.

**ANTWERPS.**—1, H. Yardley. 2, J. Andrews. 3, W. H. Mitchell.

**ANY OTHER VARIETY.**—1 and 2, H. Yardley. 3, J. W. P. James, Hereford.

**4, H. Yardley. 5, G. Packham. 6, J. H. Watkins.**

**SELLING CLASS.**—1, A. P. Maurice, Bourton, Bath. 2 and 3, J. H. Watkins. 4, H. Yardley. 5, G. Packham; W. Morris, Westbank, Ross. 6, Capt. the Hon. E. Digby; F. F. Lee, Canal, Salisbury.

The Rev. G. F. Hodson and Mr. Bailly judged the Poultry; Mr. Alsopp the Pigeons.

## KING'S LYNN POULTRY, PIGEON, AND RABBIT SHOW.

This Show was held, in conjunction with that of dogs, in the Corn Exchange, King's Lynn, on the 26th and 27th February. Turner's pens were used on the occasion, and served to display the birds in excellent style. The prizes were but 20s. and 10s. and no cups or other extras, therefore not a sufficient inducement to draw valuable poultry from the breeding pens at this time of year. The entries were not heavy, but yet sufficiently large to promise an excellent future for the Society with a schedule of prizes of greater value, which, we were assured, is contemplated for another year. The Show was well managed in every respect, the Honorary Secretaries being constantly present, showing a determination to oblige, and superintend matters themselves.

*Dorkings* were not numerous; the Dark Greys but poor, but the Silvers much better. *Cochins*, Buff, were good in both classes; while in cocks of Any other variety a capital White was placed first, and in hens a Black of rare excellence. *Brahmas*, Dark, in both classes were but poor, while the Light were of fair quality. Next came *Game*, Brown Reds winning in the cock class, the first a grand cockerel, the second an old cock, good in colour but somewhat shy. In hens a grand Brown Red stood first, and a Black Red, of high quality but rather long in body, was second. Any other colour, cocks, *Duckings* were first and second, and in hens a Pile was first and *Duckwing* second, both being good birds. The *Hamburgs* may be taken as a lot, the winners being mainly good, but the rest very poor. Of *Spanish* there were but two pens, but both very good; and the same remarks will apply to *Polands*. There were eight entries in *French* fowls, and the class was uncommonly good, *La Flèche* being first and *Crève-Cœurs* second; and in the Variety class the first were *Malays*, the second Black *Hamburgs*. As is generally the case in the eastern counties, the Selling classes were well filled, and some very good birds changed hands. *Bantams*, Black or

Brown Reds, a good pair of the latter variety came first and Black Reds second, but all the others were very poor. In the next class Piles won, both pairs being good, but the second very dirty. The next was a grand class, first Blacks and second Japanese, while many good pens were only commended. *Ducks* in both classes were good for this locality, which does not stand pre-eminent in aquatic birds. In the Variety class Carolinas were first, with Black East Indian second.

*Pigeons* were very scant in entries, and yet each class contained some good pairs or single birds, this applying particularly to the Carrier and Pouter classes; the first-prize Black Carrier hen being a grand bird and in nice bloom, while the winning Pouters were in good show. Fantails were such as can only be seen when our Newark friends compete. Dragons, Blue, were good, but the best pair of Dragons were the first-prize Yellows in the next class. In Jacobins the winners were Red and very good, but the Antwerps, if we except the first-prize pair, were bad.

*Rabbits* were a good show, the Lops doing great credit to their owners; a Fawn being first and Sooty Fawn second in bucks, and in does the first was Tortoiseshell and the second Blue-and-white, the latter, a doe of grand quality, requiring only condition to bring her to the front. Most of the Silver-Greys were noticed, and it is seldom a better collection is seen together. For any other breed, buck, a neat Himalayan was first and a Belgian Hare second, and in does a most exquisite Blue-and-white Dutch was first and a massive Angora second. In the Selling class a good Lop-ear was first.

**DORINGS (Coloured).—**Cock.—1, Mrs. G. Clark, Long Sutton. 2, H. H. Rnsh, Heybridge, Malden. County, E. M. Southwood, Fakenham. Hen.—1 and County, E. M. Southwood. 2, Mrs. G. Clark, c. H. H. Rnsh.

**DORINGS (Any other variety).—**Cock.—1, L. Wren, Lowestoft. 2 and County, T. & H. Heath, Norwich. Hen.—1, L. Wren. 2 and County, T. & H. Heath. **COCHINS (Cinnamon or Buff).—**Cock.—1, 2, and County, Major Bignold. Hen.—1, G. F. Bentley, Linton, Cambs. 2 and County, Major Bignold, Norwich. hc, H. J. Gunnell.

**COCHINS (Any other variety).—**Cock.—1, R. S. S. Woodgate, Pembury, Tunbridge Wells. 2 and County, Major Bignold. hc, T. L. Nash, Sprongton, Ipswich. c, J. A. Sleep, Kingsland, London. Hen.—1, J. F. Walton, Rawtenstall. 2, J. A. Sleep. Extra 2, T. M. Derry, Gedney, County, Major Bignold. hc, R. S. S. Woodgate.

**BRAHMAS (Dark).—**Cock.—1, J. Watts, King's Heath, Birmingham. 2, W. R. Garner, Dyke, Rourne. County, W. Branton, East Dereham. Hen.—1 and County, E. H. Willatt, Norwich. 2, J. Watts. hc, Miss Blake, Bracondale, Norwich; Rev. T. Wren, Heybridge, Malden; W. B. Gooden, Horton Green, Bradford. c, G. F. Bentley, Fakenham; W. Branton.

**BRAHMAS (Light).—**Cock.—1 and County, P. Haines, Pakgrave, Diss. 2, J. P. Case, Testerton, Fakenham. hc, H. Watson, Cringleford, Norwich. Hen.—1 and County, P. Haines. 2, J. P. Case. c, Rev. T. Wren.

**GAME (Brown or Black Reds).—**Cock.—1 and County, H. E. Martin, Sealhorpe, Fakenham. 2, S. Mathew, Stowmarket. c, J. F. Walton. Hen.—1, H. L. Cockesedge, Woolpit, Suffolk. 2, S. Mathew. County, H. E. Martin. hc, J. F. Walton.

**GAME (Any other variety).—**Cock.—1, H. L. Cockesedge. 2 and County, H. E. Martin. hc, J. F. Walton. c, S. Mathew. Hen.—1 and County, H. E. Martin. 2, S. Mathew. hc, J. F. Walton.

**HAMBURGS (Golden-pencilled).—**1, E. Walton, Horncliffe, Rawtenstall. 2, C. J. N. Row, Melford. County and c, H. T. Coldham, Lynn. hc, T. H. Readman, Furness & Sudall, Rawtenstall, Manchester. County, H. K. Platin, Jun. **HAMBURGS (Silver-spangled).—**1, E. Walton. 2 and County, H. R. Platin, jun. c, E. Hills, Ely.

**POLANDS. —**1, G. W. Boothby, Loath. 2 and County, Major C. J. Ewen, Marlingford Hall, Norwich.

**SPANISH. —**1, Furness & Sudall. 2, J. S. Dew, Gamlingay Mills, Cambridge.

**FRENCH. —**1, E. Walton. 2, W. Cutlack, Jun. Littleport. County, Major C. J. Ewen. hc, H. F. Cormegay, c. Mrs. Furness; M. Newcome, Brandon.

**ANY OTHER VARIETY OF GAME (White Malaya). —**2, W. Cutlack, Jun. (Black Hamburgs). County and hc, T. A. Wright, Great Yarmouth (Black Hamburgs). hc, J. S. Rooth, Chesterfield (Malaya); H. C. Naughton, Lynn (Pheasant); E. Branford, Swaffham (Malaya); T. Marples, Blackburn (Saltwater).

**SELLING CLASS. —**Cock.—1, W. White, Lowestoft (Black Spanish). 2, Mrs. G. Clarke (Dorking). 3, W. H. James, Fen Ditton Rectory, Cambridge (Cochin). 4, Major Bignold (Artridge Cochins). hc, J. Bone, North Elmham (Cochin); S. Pearson, Great Yarmouth (Buff Cochins); T. H. Readman. T. M. Derry (2); Mrs. G. Clarke (Dorking); J. F. Walton. c, J. Watts; J. F. Sillitoe, Wolverhampton (Spanish).

**SELLING CLASS. —**Hen.—1, W. Massey, Spalding (Buff Cochins). 2, J. A. Sleep (Dark Brahma). 3, Furness & Sudall. 4, C. J. N. Row (Golden-pencilled Hamburgs). hc, J. Bone (Cochin); G. F. Bentley (Buff Cochins); T. H. Readman. hc, T. & H. Heath (White Cochins); H. T. Coldham (Silver-spangled Hamburgs); J. F. Pearson (2); T. H. Readman; E. M. Southwood (Coloured Dorking); Major C. J. Ewen (Black Spanish); J. F. Sillitoe (Spanish). c, J. Bone (Cochin); G. F. Bentley (Buff Cochins); T. H. Readman; G. Clarke (Dorking).

**BANDOOD OR CROSSBRED. —**Pair.—1, W. Nicholson, Brisley Hall, Norfolk. 2, Mrs. Folkes. 3, W. Cutlack. hc, H. T. Coldham; Mrs. Merriss, Lynn.

**GAME BANTAMS (Black and Brown Red). —**1 and County, J. S. Pearson. 2, Mrs. T. Spurr, Lynn. hc, A. H. Jones, West Derby, Liverpool.

**GAME BANTAMS (Any other variety). —**1, E. Walton. 2 and County, E. M. Southwood. hc, C. Pole, Grantham.

**BANTAMS (Any other variety except Game). —**1, R. H. Ashton, Mottram. 2, G. B. Francis, Okeaden, Romford. County, H. R. H. The Princess of Wales. hc, T. E. Thirle, Lowestoft; J. Longe, Ipswich; J. S. Pearson; H. R. H. The Princess of Wales; J. C. Burton, Fakenham. c, Mrs. G. Clarke; E. Walton.

**AYLESBURY. —**1, Mrs. T. Wootton, Mapperley, Nottingham. 2 and County, W. Nicholson.

**DUCKS (Rouen). —**1, Mrs. T. Wootton. 2 and County, W. Hoff, Wormegay. hc, H. Hoff.

**DUCKS (Any other variety). —**1 and County, R. B. Leeds, Castlecre. 2, Mrs. T. Wootton. hc, T. J. C. Rackham, Catton, Norwich.

**TERKERS. —**1, H. J. Gunnell. 2, J. Everitt, Hadleigh, Suffolk.

**GREY. —**1 and County, Mrs. Brackenbury, Shoulham Thorpe, Downham. 2, T. M. Derry. c, A. Hammond, Westacre.

**PHEASANTS. —**1 and County, W. Marshall, North Lynn. 2, R. B. Leeds. hc, E. J. Howes, Kid's Lynn; H. R. H. The Prince of Wales.

**ORNAMENTAL BIRDS. —**1 and County, W. Sherrod. 2, W. Jakes, Holbeach. hc, W. F. Marshall; W. Jakes.

#### PIGEONS.

**CARRIERS. —**Cock.—1 and 2, W. Minson, St. Ives. hc, W. Massey, Spalding; J. Thompson, Bingley. Hen.—1, W. Minson.

**POUTERS. —**Cock.—1, Mrs. Ladd, Calne. 2 and hc, H. Pratt, Knowle. Hen.—1 and hc, H. Pratt. 2, Mrs. Ladd.

**TRUMPETERS. —**1, H. Yardley, Birmingham. 2, C. Norman, Westerfield, Ipswich.

**FANTAILS. —**1 and 2, W. H. Tomlinson, Newark. hc, J. F. Loversidge, Newark.

**TUMBLERS (Almond). —**1, H. Yardley.

**TUMBLERS (Any other variety). —**1, H. Yardley. 2 and hc, G. South, New Bond Street, London.

**OWLS. —**Cock.—1, H. Yardley.

**BARBS. —**Cock.—1, H. Yardley. 2, W. Massey.

**DRAGONS (Blue). —**1, G. South. 2, W. Smith, Walton, Liverpool. hc, G. South; H. Yardley; W. Smith.

**DRAGONS (Any other colour). —**1 and 2, G. South. hc, Rev. H. H. Bridgewater, Snettisham.

**JACOBINS. —**1, G. South. 2, J. Thompson. hc, G. South; F. Aldiss, Fakenham.

**TURBITS. —**1, H. Yardley.

**ANTWERPS. —**1, C. F. Copeman, Coft Heath, Solihull. 2, H. Yardley.

**ANY OTHER VARIETY. —**1, H. Yardley. 2, A. Hammond.

**SELLING CLASS. —**1, H. Thurlow, Burnham Market. 2, J. Thompson. hc, H. Yardley.

#### RABBITS.

**LOPS. —**Buck.—1, F. Banks, Donghy Street, London. 2, C. Dodson, Lynn. Doe.—1, F. Banks. 2, F. J. Smith, East Dereham. hc, F. Banks; C. Dodson.

**SILVER-GREY. —**Buck or Doe.—1 and 2, B. W. Mason, Hall. hc, W. R. Cooke, Moulton, Spalding; S. Ball, Bradford. hc, E. M. Royds, Rochdale; G. P. & R. Hackett, Haverstock Hill; F. J. Smith. c, E. M. Royds.

**ANY OTHER PURE BREED. —**Buck.—1, W. H. Tomlinson (Himalayan). 2, A. C. Wiseman, Spalding (Belgian Hare). hc, F. J. Smith (Himalayan). Doe.—1 and 2, B. W. Mason (Blue and White Dutch and Angora). hc, F. J. Smith (Angora).

**HEAVIEST. —**Buck or Doe.—2, J. Brown (Doe).

**SELLING CLASS. —**Buck or Doe.—1, F. Banks (Lop-eared Doe). 2, F. J. Smith (Yellow Doe). hc, Master T. M. Nash, Brinkley, Newmarket (Himalayan).

**JUDGES. —**Mr. F. C. Esquilant, Mr. J. Dixon, Mr. E. Hutton.

#### NEW BOOK.

*The Illustrated Book of Poultry, with Practical Schedules for Judging Constructed from Actual Analysis of the Best Modern Decisions.* By LEWIS WRIGHT, Author of "The Practical Poultry-keeper," "The Brahma Fowl," &c. *Illustrated with Fifty Coloured Portraits of Prize Birds, Painted from Life* by J. W. LUDLOW. Cassell, Petter, & Galpin, London, Paris, and New York.

MANY fanciers, like ourselves, have looked forward, each month of the last two years, with interest and pleasing expectation, to receiving a new number of Mr. Wright's "Illustrated Book of Poultry." So much have we ourselves grown accustomed to a square yellow number with two coloured portraits of birds, sometimes personally known to us, coming in with a new month, that we are almost sorry there are no more to come. Still, loose numbers are after all a little unsatisfactory, and a book is better, with title-page and index in their right places, and the pictures fixed for ever where they each ought to be. A book is more easily referred to than loose sheets; the places kept; the marked portions, marked by our pencils, sooner found. Now, at length, the "Illustrated Book of Poultry" is a book, a handsomely bound book, as all might see who were present at our great Crystal Palace Show.

To attempt to give an analysis of so large a work would exceed, far exceed, the limits that can be given to a review in the columns of this Journal. First we would say, that comparing the pictures of this work and the account of the different breeds with former high-class publications of a kindred nature, there is a marked progress, coincident with the progress in the fancy, for progress in nearly all the varieties there has been. If this progress is not seen in some shows it is seen in others. It is easy to sit and dream—a habit of older fanciers—that birds were better in former years than now; but if the comparison could be made with the eye, the error, except as regards some few varieties, would be seen at once. Now, it is a great thing to have a book in picture and description up to the day, and Mr. Wright's book is up to the present day. No artist is to be blamed for representing birds a few years since different to what they now are, for points have varied. All we ask of artists is to represent birds as they are at the time a work on poultry is issued, and this Mr. Ludlow has done. A glance through the index reveals the vast bulk of the knowledge accumulated in the book. The best men in each variety have done their best. Schedules of judging are given by those who actually judge; and hence fanciers have correct guides for mind and eye, for Mr. Ludlow has been most careful to represent points in his pictures.

The book is, as it lies before us, an ornament to any library—handsome outside, and handsomer inside. As to its contents, they may be summed up thus: To the general reader they will be found to be interesting, to the poultry fancier they will be valuable, to the exhibitor simply invaluable.—WILTSHIRE RECTOR.

#### BREEDING CANARIES IN A ROOM UNCAGED.

My little ones have some Canaries, and we have a spare attic facing due south. Will the Canaries breed well flying about the room? How many hens may they put to each cock? Would it be advisable to put Linnet or Goldfinches in with the Canaries, or birds of any other sort? Would a small tree in the centre of the room be useful, and, if so, what sort would be the best?

Kindly advise a family who, if such a thing is possible, are completely demoralised by those naughty men "WILTSHIRE RECTOR," Mr. W. A. Blakston, and other writers to papa's first piece of reading, on getting home off his journey, "our Journal."—ST. EDMUNDS.

[Who that has children but would feel interested in the spare attic, facing due south, with its prospective pleasures? It is quite refreshing after the turmoil of the exhibition season to be asked such a string of interesting questions. They savour of coming spring, fresh-turned earth, green moss, budding primroses and sweet-scented violets, warm sunshine and lengthening days; and they speak, too, of the early spring time of life, with its happy present and rosy future. May the lessons to be learned in the spare attic, its joys and sorrows, hopes fulfilled, and bitter disappointments, not be lost on "my little ones."

The Canaries will breed famously if turned loose in the room; and where no single variety is kept and no particular excellence aimed at, there is no better plan, or one more adapted to furnish the largest amount of pleasure at the smallest amount of trouble or expense. The bird has more scope for freedom of action in a room than in a box 18 inches square, though he is as happy in the one as in the other, and his life approximates more nearly, yet still only very remotely, to what it is in an unconfined state.

I would not like to say how many hens are the proper share for each cock in such an agapemone. Though, to some extent, all things will be shared in common, yet each cock will pair with some particular hen and pay her special attention, at least till she is sitting, when the chances are he will court some new flame; but he will not neglect his first love, and will continue to feed her on the nest, though, under the circumstances, he will become general in his attentions. And it is strange how hens in an aviary will sometimes behave. I have seen two sitting on the edge of the same nest feeding as assiduously as if each claimed the young ones for her own. Turn in the stock at once, and see how things work.

By all means introduce Linnets (cocks), and Goldfinches, either cocks or hens. Hen Linnets will breed in rooms only under special treatment, and then very rarely; but a hen Goldfinch will build, sit, hatch, and feed as well as a Canary. The produce will be Linnet and Canary Mules, and Goldfinch and Canary Mules, and will in all probability be dark self-coloured birds. The hens will be useless, but the cocks excellent songsters. You might add a hen Bullfinch or two. There is no knowing where the blessing might fall.

I would not confine myself to one tree in the centre, but place several round the walls. The best for the purpose are small fir trees (such as are used for Christmas trees), which can be got at any nursery, and, if carefully lifted and suitably potted, will remain fresh for a long time. The birds will pull them about, and by the end of the summer they will be done for, as they cannot be expected to put forth their new leaves under such circumstances. If, in addition to these, you can get any old roots, or any such rough material, to place against or hang on the wall, you will find the birds will soon select the snug corners and begin to build. Give a supply of moss, soft hay, any bunch of fibrous roots you may meet with, or similar material (with which they will build the foundation of their nests), and plenty of soft doe-hair, which you can get—I don't know where. We get it from the carpet factories. Add some Rabbit-down, with which they will put the finishing touch to a nest, which will make "my little ones" look on with amazement, and wonder how such an article can be fabricated from such materials without hands.

Having got thus far, notice when any hen is beginning to build; then sit quietly down in a corner and watch the operation. She will not at all object to your company. When you have a neat of eggs send the announcement to 171, Fleet Street, and I will do my best to show you how to rear the young ones.—W. A. BLAKSTON.]

## STRAY NOTES ON THE CRYSTAL PALACE CANARY SHOW.

LAST year and this I visited the Show with feelings of anything but satisfaction. You ask me why? Well, I cannot say, but—

"I did not like the Palace Show,  
The reason why I do not know,  
But I didn't like the Palace Show."

It's well we don't all look at things with the same eyes, and I am glad to find that a first visit has warmed-up our friend "WILTSHIRE RECTOR" into two columns pleasant report of general impressions of this the final gathering of the eventful season of '73. I, too, enter from the west end, and to me, who seldom see the Palace more than once in a year, the impression of surrounding beauty is as fresh, as novel, and as sensibly realised as when I first flung open the awing doors and entered the fairy structure, leaving the outside world behind in a way you can do nowhere else. But in the "Arabian Night-like pavilion" I could see no beauty; indeed, what I did say to a

friend who performs the annual pilgrimage with me was, "What a den of a place!" With the tent, as a tent, I have no fault to find, nor with the internal arrangements (excepting the staging of the Belgians), but the tent itself is a mistake. I am not alone in my opinion, and am perfectly satisfied that if an appeal were made to the entire "constituency," the result of the poll would show a decided "reaction" in favour of the tropical department (with all risks of deaths) and clear sunlight. Birds which have not been coddled-up, but which have been knocking about the country for the last six months chanting their evensong in a railway station, and matina in the guard's van, are not afraid of the temperature of the Crystal Palace. At night the green-baize covering could easily be turned up over the cages, and everything would be as snug as possible. Pretty as the birds may look, to the uninitiated, in the subdued light, and though, as Mr. Wilson agreed with me, it is as fair for one as for the other, it is fair to none, neither to exhibitor, seller, nor buyer; and I am bold enough to say that nineteen out of every twenty casual purchasers who claimed a bird under the tent would not recognise it in clear daylight.

If it be the best arrangement the Crystal Palace can offer, then, I say, despite all its beautiful surroundings, it is a bad arrangement.

I think also that the staging of the Belgians might be better arranged. The Crystal Palace Show is not an ordinary affair, and with the appliances and resources at command one naturally looks for a model show. It surely could not disarrange or throw things out of gear to have a niche set apart for these remarkable birds—some quiet corner in which each bird could be perfectly isolated, and be "put up" at pleasure. It is most unsatisfactory to see a row of these specimens; and beyond the fact that this one is ticketed first, this second, and that third, there is no possible means of arriving at any accurate conclusion as to their merits. And it must be specially mortifying to a keen faucier and thorough judge of this variety to know that in some instances the awards are flagrantly wrong, and yet under the circumstances the superior bird cannot stand up and assert the incompetency of the judges, or any error or oversight which may have been committed. Mr. Wilson reasoned that it would be injudicious to legislate for any particular class of birds. The fact is, every class is legislated for except Belgians, and they are not adequately provided for.

The display of Norwich birds was very fine, and the separation of the "hot" ones from those moulted under the old régime a judicious arrangement, which might have been carried out on a more liberal scale. It was hardly fair to classify the one *in extenso* and to crowd the others into two classes. A special prize was given by Mr. Barney to the winner of the greatest number of points in the not-high-coloured classes; but what will "WILTSHIRE RECTOR" and everybody else think when I say that every individual bird which helped to win that prize was a *bona-fide* "hot" bird? Surely the Judges know nothing about them when they see them! Mr. Bemrose was in the Show on Monday, and considering the "peppering" he has received, was in rare form. It was a great triumph for him to win such laurels on the scene of his last year's attempted disgrace. Truly has he kept his promise made last year when smarting under the opprobrium of implied dishonesty, and already before the advent of another moulting season has his prophecy been fulfilled that they "all would do it," for even in the "hot" classes he was opposed by late-hatched birds, and beaten too. In one or two partially-moulted specimens the new high-coloured feathers came out in marked contrast to the pale nest feathers. It will, perhaps, be needless to say that Mr. Bemrose will not accept the special prize, but hands it over to the Derby Ragged School.

With regard to "WILTSHIRE RECTOR's" hope that this new method of feeding may make a like advance in Almond Tumblers or other Pigeons, I see no reason why it should not. The theory that judicious feeding can affect colour in feather, if administered while the blood is in circulation in the feather, being now established beyond doubt, opens a wide field for experiment.

I still maintain that Mr. Bemrose, having borne the brunt of the fight and overcome blundering ignorance and wicked opposition, deserves the substantial thanks and acknowledgments of the feather fancy generally. And I ask "WILTSHIRE RECTOR," who, I know, is ever willing to support all that is gentle and true, and Howarth Ashton and others whose names once adorned the faucy, but who have retired from it simply because they could no longer remain in it with pleasure, to help me to give effect to this. Mr. Bemrose, disgraced, retires from public competition, bequeathing this legacy to future fauciers. So, one by one, we lose our best men. It ought not to be.

I cannot now notice many individual specimens, but among the not-high-coloured birds, Mr. W. Walter's two Clear Buifs (121 and 122) were great, and among the "hot" birds, Bemrose and Orme's Clear Buff (251) stood alone. I was much amused at overhearing two of his admirers' remarks. "Why, if here oint old Cherrybun!" It really is a cherub. There never was such a bird.

London Fancies seem on the decline. Try the cayenne, Mr. Waller!

Lizards, as a class, were poor, but the names of Watson and Fairbrass are quite sufficient guarantee of the excellence of their specimens. Mr. Dove's Golden-spangled bird, 411, I liked much. Mr. Fairbrass's 462, Broken-capped Silver, was a gem; only two minute specks in his cap.

Broken-capped birds really are worth a meed of praise. The very best will throw them, and foul-capped birds and even birds with no cap will throw perfect specimens. As a rule they are generally well spangled, and a broken cap is only an excess of spangle. But pied wings and tails!—that is quite another thing. Save me from them. Cinnamons were numerous and good. Mr. Adams's first-prize birds were fine, but I think I liked 492, second, better than 493, first.

The judging in the next two classes was one of those things nobody can understand. First, in the Marked or Variegated Cinnamons first and second prizes were withheld, and third awarded to a "hot" specimen of Bemrose & Orme's; but behind were 571, 572, and 573, three birds of Mr. Luke Bell's, of which 571, a Jonque, and 572, a Mealy, at least were gems of the first water. There are not six such in England. Then in "Any other variety" the performance was eclipsed. First and third were withheld. Second went to—I have omitted to note what, but I think a Copy. However, there remained 589, John Martin, a grand Copy; 593, Mr. Hawman, a long Green, a champion bird; 605, Mr. Baxter, another splendid Copy, and 606, Mr. Baxter, the only Scotch Fancy in the Show, and a champion bird too! Now, if birds of this stamp are not considered worthy of prizes in the "Any other variety," tell me what are. Poor encouragement indeed for men to send their specialities from the far north to be so little appreciated, or so little understood.

Goldfinch Mules, with the exception of Mr. Doel's, were nothing extra. Mr. Doel brings his birds up to the mark in rare condition. In this respect he is almost unequalled. His Jonques were fine birds, but he has shown others in previous years which would have distanced them. His first Mealy was a beauty; size, colour, quality, delicacy of wing-markings (but I have seen a thousand times better eyes), were all there. But I was very much disappointed at not seeing my Buff friend of last year, the bird with the "tail feathers all told!" It's only a few weeks ago that Mr. Doel published that it was the "second best Buff Mule in England," and really I did not think he was the man to have deprived the world of the sight, or to have parted with such a gem with the Crystal Palace Show so near at hand.

When I say that Sels were good, and that Mr. Walter occupied his usual place of premier among the sixes in the Norwich groups, I have finished my grumble.—W. A. BLAKSTON.

### MODERN BEE-MANAGEMENT.

THE man who reforms abuses or who makes decided improvements in any industry may truly be regarded as a public benefactor. Whoever improves upon any system generally gets his share of abuse; but if he has the courage in the face of sneer and sarcasm to keep steadily on in the path of common sense and duty, he will in the end be sure to have a large number of followers. When a man stands before the world advocating a system which he has thoroughly tested, he does so with confidence, at the same time knowing that he is laying himself open to criticism; this he does not shun.

When anyone thus comes forward, and plainly and clearly sets forth his views, and attacks long-seated custom and deep-rooted prejudice, he is certain to have a swarm about his ears. We all know how hard a matter it is to batter down the walls of prejudice. "My father did so and so. What was good enough for him is good enough for me." "My mother used the brimstone rag; if she had not done so we should have had bees enough to have stocked a kingdom. I want none of your new-fangled notions;" and so thousands of valuable lives have been destroyed for want of a little knowledge. Some years ago, in many parts, it was not thought possible that bees in straw hives could be deprived of their honey without destroying them. Another idea deeply stamped upon the old bee-keeper's mind was that if you could take the honey, the bees would die of starvation. Feeding and uniting were not thought of, or if so, deemed impracticable. These ideas had to be assailed, and combated with common-sense arguments resting upon practical experience. Who would sound the charge, come to the front, do battle for the humane system, and advocate a different method without materially augmenting the expense? Was there a man who would come forward and do this? Yes. We have that man in Mr. Pettigrew, who has a larger following than perhaps he himself is aware of. When he published his "Handy Book of Bees" he let in a flood of light upon many rural districts; the walls of prejudice have crumbled before it; destroying bees is going out of fashion; many bee-keepers of the old type are using their small straw hives as super-covers, and are adopting the large hives.

I have tried almost everything that Mr. Pettigrew has recommended in the second part of his book, and have found all practicable and easy—artificial swarming, driving, the use of surplus queens, &c. There is this merit in the book—that it is written for the "benefit of those who are entirely ignorant of the subject on which it treats." So plainly and clearly is the subject treated on, that anyone with nerve, without any other teaching, may manipulate his hives; swarm, drive, or spoon his bees to his heart's content.

Far be it from me to disparage wood and fancy hives; but the price alone would deter many from keeping bees if they had to purchase these costly boxes. The straw hive is within the reach of most people; and now that Mr. Pettigrew has made it clear that it can be so easily handled, I doubt not that his system of management will be gradually extended throughout the length and breadth of the land. If we want pure run honey, or if we want beautiful supers, we can get them from straw hives as well as from the most expensive boxes. An old bee-keeper told me that if he had known of Mr. Pettigrew's system before, "it would have been pounds in his pocket."—J. OLIVER, Hartington, Derbyshire.

### THE BEE-KEEPER'S CALENDAR FOR MARCH.

MR. B.—I have taken your advice, and bought a couple of stocks of bees. The hives are rather small and old-fashioned in shape, but no others could be found on sale in our neighbourhood.

MR. P.—If the stocks are in good condition, they will be ready to swarm early in May, when the swarms could be put into hives not only of greater size and symmetry, but more suitable as habitations for bees and storehouses for their honey. In May and June every bee-keeper may transfer his bees into any kind of hive he may prefer, and do it without making any sacrifice. By-and-by you will see how simple and advantageous the process is of ridding our apiaries of hives that are unsuitable in shape and materials, and giving to the bees houses that afford them space for their breeding powers and the accumulations of their industry. Meanwhile, let us examine the hives you have bought. Lift them gently off their boards, and turn them up, so that we can see in what condition they are.

MR. B.—I would not venture to turn them up for twice their cost—the bees would sting me to death if I did.

MR. P.—Oh, no! If the hives are healthy, the bees will not at this season stir much before we shall have seen whether they have bees and honey enough. Let me turn up the first one, and please to notice how easily and quietly it can be done. Do you see the bees sitting closely among the combs in the centre of the hive? This hive contains what is technically called four seams of bees—that is, four lots of bees may be seen, each about the size or breadth of a tea-cup saucer, and separated by three combs. This hive is apparently a good one, and in an ordinary season it will swarm early in May. Now, Mr. B., please to turn up the other hive, that we may see whether it is in as good condition as this.

MR. B.—I never saw bees handled and looked at in that way, and I am astonished that they have not punished you for disturbing them. I suppose I shall have to manipulate my hives sometimes, and therefore may as well begin now.

MR. P.—The combs in this (second) hive are very black, and it contains only three seams of bees—it is not equal in value to the other one. But let us examine them more minutely. Here is a bit of old corduroy rolled together; please to hold the end of it against a red-hot cinder till it smokes. Now blow the smoke into the hive we first lifted till you hear the bees making a noise. Turn it up. See how the bees are running in all directions. The smoke has mastered them. Blow a little more on that cluster in the centre of the hive covering the brood. Look! I see two patches of sealed brood about the size of the mouth of a tea-cup. These patches are at least ten days old, for brood is always about nine or ten days old before it is sealed-up or covered with lids. Doubtless there are in the hive eggs and younger brood which we cannot see at present. These patches of brood become larger and more numerous till they reach to the extremities of the combs.

MR. B.—Well, if I had not seen with my own eyes how hives can be handled and examined with ease and safety, I would hardly have believed it possible to do so. How peaceable the bees are! Here is a comb with larger cells than the rest; and on the edge of the comb against it I see two cells quite different in form from all the rest—are these royal cells?

MR. P.—Yes, that is drone comb, and these are queen cells. I am glad, Mr. B., that you have already so much courage as to examine for yourself. By examining your hives thus every now and then you will soon understand the mysteries of bee-keeping, and become an expert in the manipulation and management of your hives. By using liberally the smoke from old corduroy or fustian you may do anything you like with your bees. If they ever become courageous while you are at work, give them an extra dose of smoke, and this will take the courage and friskiness out of them. Give this hive a few puffs more, and then carry it round the garden open and exposed, while I get some

syrup mixed at the house, wherewith to show you an easy and excellent way of feeding bees.

MR. B.—What a wonderful power this smoke has over bees! I begin to think I shall have but little difficulty in mastering the art of bee-keeping. Let me see you administer the syrup, or tell me how to do it.

MR. P.—Turn up the hive once more, and hold it so that the combs may be in a slanting position. Then pour the liquid first along one comb, then another till all have been gone over. As most of the cells are now empty, the syrup will run into them before it reaches the crown of the hive; and if it goes on some of the bees, no harm will be done, for other bees will speedily lick it off. You now see how easily food can be given to bees. There are many other ways of feeding them, any one of which may be practised where only a few hives are kept. Tin troughs about 12 inches long and less than half an inch deep are handy appliances for giving small quantities of syrup to bees in spring. A little more should be given to hives this month than what was named for February. Hives by the end of this month will have more bees and brood, and therefore require more food.

MR. B.—I can now see that hives standing singly on three posts are more comfortable and easily examined than those placed in a bee-house.

MR. P.—No competent practical bee-master prefers a bee-house to separate stands for hives. All hives should be placed so as to be easily examined; and the longer we practise bee-keeping, the more clearly we see the importance of frequently examining our hives internally. For instance, if the bees in some stocks be found at the commencement of March to be reduced to two seams—i.e., two lots on each side of a comb in each hive—the safer way is to make one good hive out of two weak ones by uniting them. If hives have three seams of bees in March, and are otherwise healthy, they will live; but when reduced to two seams of bees many of them will not do so. Let your aim be to have strong healthy hives, examine them thoroughly as often as you have time, and thus you will speedily become a master of the art of bee-keeping, knowing intelligently what both you and your bees are about, and free from the fear of committing mistakes through ignorance. Study the natural history of bees while you are aiming at their profitable management, and I think I need not tell you that whatever is worth doing should be done well.

As bees use a great deal of water during the breeding season, it is well to keep a supply of it near the apiary; and many writers recommend salt to be mixed with water given to the bees.

If the entrances to hives have been contracted during the winter, they should be enlarged at the end of the month. Let it be remembered that the perfection of management from March till August consists in keeping hives in a state of health and progress. If the weather be unpropitious, bees should be fed; for if kept on the point of starvation, they instinctively cast out their young and refuse to sit eggs, their combs become empty of brood, and many hives thus suffer from a kind of relapse and collapse. All this should be prevented by feeding when necessary. A few pounds of food in a hive are an encouragement to them to fill their combs with brood.—A. PETTIGREW.

## OUR LETTER BOX.

CONDITION POWDERS (IV. IV.).—We are sorry we can give you no receipt of the kind. We do not believe in them. There is plenty of natural food for men and animals, and as a rule the simpler it is the better. This will at once confine us to Nature's menu. The treatment of a patient is to remove something that offends, or to supply something that is lacking. They are the conditions of cure, and are seldom necessary where the living is plain and natural. We have kept horses, poultry, dogs, and other stock for fifty years, and have used nothing of the sort.

DORRINGS SICKLY (E. E. S.).—You have evidently disease among your birds. It may be caused by the changeable and trying weather. It cannot be caused by the ground oats if they are properly ground. If they be so, they will then mix with water or any other liquid as smoothly as cream or oatmeal, although none of the hull or skin of the corn is removed, or bran taken away. Not only is it impossible for this to injure fowls, but they do better on it than anything else. It is the universal food in Sussex, whence we derive all our best London poultry. Few millers have stones fitted for this process, and when the operation is improperly performed the mixture presents the appearance of having been mixed with chaff. Fowls dislike this, and will starve upon it.

DUCK-MANAGEMENT (Quack).—Ducks want very little water, and will go to it when it is necessary. They need not live by the stream. You may have some Ducks as well as eggs. The former are useful in winter, when eggs are out of the question. You will do well to keep a drake. We advise you to keep Rouens. You must buy some cheap ones. Such, with defects known only to the "pundit," are generally to be met with at a moderate price.

FOURTELLING THE SEX OF EGGS (X. B.).—Many hundreds of years ago this knowledge was pretended to. It has remained the same to this day. It has always been said the pointed egg produced a cock, and the round one a pullet. We do not believe in it. Trials made by ourselves and friends, many of them medical men, have all been failures.

FENCE OF POULTRY-YARD (Joy).—Brahmas and Cochins can be safely kept in by a wall 3 feet high; Houdans and Poland must have 2 feet higher; Crève-Cœur, Hamburgs, Spanish, Game, and Bantams, by the great wall of China.

GAME HEN LAME (F. G. D.).—We can give little hope of any cure. The only favourable symptom is that the limb is not cold. It is, however, in our opinion paralysed. We have a hen Pheasant that has been two years in the

same condition. Year after year we have looked for improvement, and found none. We now intend to kill her.

EXCESS OF SPANISH COCK'S FACE (W. I. B.).—Your bird has a cauliflower face—common defect among Spanish, and chiefly belonging to the best specimens. There is only one treatment, and that is not without its disadvantages. It is to put two small straps of sticking or adhesive plaster on the skin, compelling enough of the eye to keep open to enable the bird to see. There is no cure for it, but relief is sometimes afforded by frequent use of a strong solution of alum in water. Vinagar may be used for the same purpose.

BEES ERECTING DEAD PUPA, &c. (F. R. L.).—It is very usual at this time of the year. If you send the notes we will impartially judge them.

TRANSFERRING BEES (Joy).—If the combs in your bar-frame hive are straight, you may easily transfer them to another hive by cutting them clean out and unbroken from the old bars, and fitting them neatly into the new ones. A few drops of melted wax will cement them to the new bars. The operation should be performed at noon some fine day, or by candlelight in a warm room. In this way you may succeed without the loss of a bee.

CANARIES IN A GAS-HEATED ROOM (A Young Beginner).—It will neither affect their health nor their plumage if the products of combustion are conveyed into a chimney and not allowed to vitiate the atmosphere of the room. It matters not what the young ones are like in their nest feathers. The time to decide their future is during moulting. After that it matters not if they get as black as swamps. It is a simple thing to wash them as often as required for exhibition.—W. A. BLAKSTON.

FEEDING WAX-BILLS, BUDGERIGARS, AND WEAVER BIRDS (St. Edmunds).—Spice birds and Wax-bills thrive best on millet seed; Weaver birds and Budgerigars eat canary seed. Hemp seed should not be given to them, but a little green food occasionally is good for them.

CRUSHED OATS (Julia).—Apply to Mr. Agate, Slougham Mills, Crawley, Sussex, or to Messrs. J. & H. Robinson, Bridge Mills, Lewisham.

## METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barom. for at sea and level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- peratures.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Feb.	29.867	36.3	84.2	E.	40.1	44.4	30.6	60.2	26.7	0.027
March.	29.813	44.8	43.6	S.	40.0	48.6	35.1	49.2	32.7	0.578
1st	29.261	44.0	42.0	S.W.	42.2	53.8	40.9	89.8	39.3	0.008
2nd	30.005	37.8	37.7	N.W.	42.0	54.5	82.3	85.5	29.4	0.010
3rd	29.930	43.4	46.7	S.W.	42.2	54.8	36.5	82.1	35.2	—
4th	29.897	41.8	41.8	S.E.	42.2	51.4	40.2	80.8	38.6	0.010
5th	29.560	42.4	40.8	N.E.	42.9	52.7	38.1	59.2	38.2	—
Means	29.905	41.9	42.9		41.8	51.5	36.2	75.2	34.0	0.038

## REMARKS.

- 25th.—White frost early; a fine though not a bright day.  
26th.—Wet morning, and showery all day; showers frequent rather than heavy; fine at night.  
27th.—Very fine all the fore part of the day, but rather windy; sharp shower about 5 P.M.; fine night.  
28th.—Foggy early, but fine before 10 A.M., and a very fine day.  
March 1st.—Rain early, but fair by 9 A.M.; rather sharp shower between 3 and 4 P.M., then fine.  
2nd.—Foggy early, and rather so at intervals all day; scarce any wind.  
3rd.—A very pleasant spring day, at times beautifully bright.  
The mean temperature about 3° above that of last week, except in the case of sun maximum, which is 11° above; of course caused by the greater altitude of the sun, in addition to the much brighter days that we have had; though the air is still far from being so clear as usual at this time of the year.  
—G. J. SYMONS.

## COVENT GARDEN MARKET.—MARCH 4.

Our quotations of last week are barely maintained in consequence of the slack demand now prevailing. Hothouse Grapes of good quality are in fair request, but Pines of English growth are lower in price, in consequence of the large arrivals from St. Michaels.

## FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples.....	1 sieve	10	0	2	0	Oranges.....	100	4	0	12	0
Chestnuts.....	1 bushel	10	0	20	0	Pears, kitchen.....	doz.	2	0	3	0
Filberts.....	1b.	1	0	1	6	dessert.....	doz.	3	0	10	0
Cobs.....	1b.	1	0	1	6	Pine Apples.....	1b.	4	0	6	0
Grapes, hothouse.....	1b.	2	0	7	0	Quinces.....	doz.	0	0	0	0
Lemons.....	100	4	0	12	0	Walnuts.....	1 bushel	10	0	16	0
Melons.....	each	0	0	0	0	ditto.....	100	2	0	2	6

## VEGETABLES.

				d. s. d.						s. d. s. d.	
Artichokes.....	doz.	6	0	6	Mushrooms.....	pottle	1	0	2	0	0
Asparagus.....	100	4	0	8	Mustard & Cress.....	punnet	0	2	0	6	0
French.....	18	0	25	0	Onions.....	1bushel	4	0	6	0	0
Beans, Kidney.....	100	2	0	0	pickling.....	quart	0	6	0	0	0
Beet, Red.....	doz	1	0	5	Parsley per doz. bunches	4	0	6	0	0	0
Broccoli.....	bundle	0	9	1	Parsnips.....	doz.	0	9	1	0	0
Cabbage.....	doz.	1	0	1	Peas.....	quart	0	0	6	0	0
Capeiscums.....	100	0	0	0	Potatoes.....	1bushel	3	6	4	0	0
Carrots.....	bundle	0	0	0	Kidney.....	do.	0	0	0	0	0
Canflower.....	doz.	5	0	6	Round.....	do.	0	0	0	6	0
Celery.....	bundle	1	6	2	Radishes.....	doz. bunches	1	0	1	0	0
Colsworts.....	doz. bunches	2	6	4	Rhubarb.....	bundle	0	9	1	6	0
Cucumbers.....	each	1	0	2	Salsify.....	bundle	1	6	0	0	0
Cabbages.....	doz.	1	0	0	Savoy.....	doz.	1	0	2	0	0
Endive.....	doz.	2	0	0	Scorzoneria.....	bundle	1	0	0	0	0
Fennel.....	bundle	0	9	0	Sea-kale.....	basket	1	0	2	6	0
Garlic.....	1b.	0	6	0	Shallots.....	1b.	0	8	0	0	0
Herbs.....	1b.	0	3	0	Spinach.....	1bushel	2	0	8	0	0
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	0	0	0	0	0
Leeks.....	bundle	0	3	0	Turnips.....	1bunch	0	3	0	4	0
Lettuce.....	doz.	1	0	4	Vegetable Marrows.....	do.	0	0	0	0	0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	MARCH 12—18, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.		Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.		
12	Th	Meeting of Royal Society, 8.30 P.M.	50.4	32.2	41.3	21	23	af 6	57	af 5	31	3	9	10	24	9	54	71
13	F		50.4	34.0	42.2	15	21	6	59	5	28	4	13	11	25	9	38	72
14	S	Meeting of Entomological Society, 7 P.M.	50.8	34.4	42.6	20	18	6	0	6	10	5			26	9	21	73
15	SUN	4 SUNDAY IN LENT.	50.6	33.6	42.1	21	16	6	2	6	41	5	2	2	27	9	4	74
16	M	Meeting of Zoological Society, 8.30 P.M.	51.0	34.0	42.5	14	14	6	4	6	4	6	35	3	28	8	47	75
17	Tu	St. PATRICK'S DAY.	52.0	32.5	42.3	13	12	6	5	6	21	6	8	5	29	8	29	76
18	W	Royal Horticultural Society's Committee (Meetings and Hyacinth Show.	49.9	33.0	41.5	13	9	6	7	6	37	6	40	6	●	8	11	77

From observations taken near London during forty-three years, the average day temperature of the week is 50.7°; and its night temperature 33.4°. The greatest heat was 67°, on the 12th, 1811, and 15th, 1833; and the lowest cold 17° on the 17th, 1815. The greatest fall of rain was 0.70 inch.

## GRAPE VINE CULTURE FOR SMALL GARDENS.

No. 1.



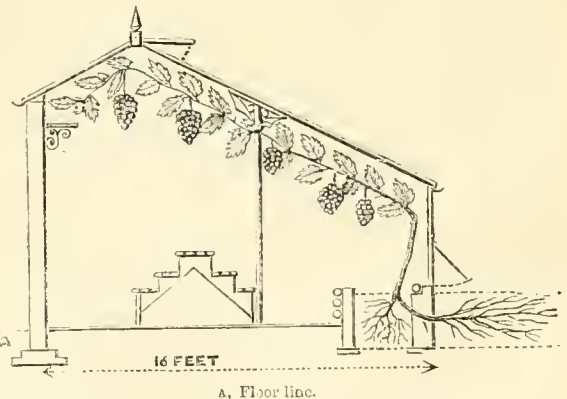
ESPIE all that has been written upon the Grape Vine and its culture, and especially as no extraordinary amount of skill or intelligence is required to enable anyone to master every detail of the process, it is surprising that failures are so frequent. It may be that too much is attempted to be done: the Vines are cropped too soon or too heavily; red spider or thrips destroys the tissue of the foliage long before the sap

is elaborated; the roots are parched and destroyed by drought; or mildew has attacked the Vines with such virulence as to destroy all hopes of a crop. Whatever may have been the cause, the reality of such failures is an undoubted fact, and this has induced me to communicate one or two papers on the subject.

When the amateur's glass house, or the solitary vinery of a small garden, is first of all built, it is often regarded as a sort of horticultural cornucopia that is to yield a bountiful supply of the choicest flowers and fruit. Visions of huge bunches of Grapes and the gayest flowers dwell so forcibly and constantly upon the mind as even to envelope the builder's account—always a little heavier than was expected—with a sort of halo, and for once a cheque is written out with a feeling of real pleasure; for does not the teeming future gild the investment with the brightness of its promise? The first slight twinge of doubt, the first dash of shade that is imparted to what was hitherto all *couleur de rose*, usually occurs when the Vines are received, the so-called "strong, well-ripened" canes often presenting so straw-like an appearance as to give rise to the supposition that the strength of a young Grape Vine must surely be wonderfully concentrated, or else how can such weak-looking objects ever be brought to produce those immense clusters of fruit, the sight of which, probably, created the wish to grow some? Well, the Vines are duly planted, and some growth follows, but from some mysterious cause it is neither very long nor strong. Well would it be if the alarm were then taken, and the advice of some good Grape-grower sought; but it is not always so. I very well remember being taken into a new vinery one autumn by a person holding the position of head gardener to a nobleman, who actually pointed with an air—not of mortification—but of evident satisfaction, to some Vines planted the previous spring, the growth of which was exceedingly weak, and of an average length of not more than 5 or 6 feet, and what made such ignorant and miserable practice appear all the more remarkable was the fact of the neighbourhood being rather famous for its fine Grapes. Vines so treated very seldom die outright, they linger on from year to year, yielding perchance an occasional bunch or two, sometimes at length becoming tolerably robust and fruitful; but it is the exception rather than the rule. I once saw a vinery which was really most interesting and curious in this respect. The whole of the Vines had, by way of

experiment, been planted some years previously in a very poor stiff clayey soil, surrounded by rich loam, the roots receiving no artificial nutriment whatever. I do not think any of the Vines failed to make some growth—certainly the majority were alive when I saw them, and the roots of several had made their way into the good soil, as the vigorous growth laden with a splendid crop of ripe fruit clearly showed, while the remainder were still struggling in the clay for bare existence. Nor does this remarkable instance of the innate vigour and wonderful vitality of the Vine stand alone, many examples might be cited of Vines that have been reclaimed by skilful culture from mediocrity to a high condition of excellence. Enough has been said, however, to prove to those who have had failures, that while the Vine is very tenacious of life, fair treatment and suitable soil are necessary to successful cultivation; and before proceeding to show what these are, it will be first of all necessary to provide a suitable structure.

There are numerous cheap houses in which Grapes and some pot plants may be grown very well. For instance, I used a few years ago to obtain some good crops of Grapes in one of those curious buildings termed "Paxton Vineries;" but I do not recommend cheap houses, for they are not very durable.



The accompanying figure is a section of a light, strong, and durable vinery suitable for any garden, but peculiarly adapted to the requirements of an amateur by the arrangement of the interior. The roof is a fixture; air given as shown. Its dimensions are:—Height of back wall from floor, 9 feet 6 inches; apex of roof from floor line, 12 feet; height of the front wall from the bottom of the Vine border, 2 feet 8 inches; height of the glazed part of the front, 4 feet 6 inches; width, 16 feet; extreme height of stage, 3 feet; width of stage, 5 feet; the interior retaining wall is 4½ inches, or a single brick in thickness. The iron pillars require to be placed about 10 feet apart, and an iron bar passing along under the roof from pillar to pillar imparts great strength to it. The whole surface of the floor should be paved or con-

creted and faced with Portland cement. The Vines should be planted in the narrow interior border, the roots passing through arches to the outside.

In preparing the border, if the soil will produce good vegetables it will answer perfectly well for the Vines, and two points only will require attention—the first is to see that the superfluous moisture arising from heavy rains or other causes drains away sufficiently fast to avoid stagnation; the second, to have the soil of a uniform depth of not much less than 2 feet, and if, as is usually the case, the natural soil is not deep enough, apply the necessary addition to raise the border somewhat above the surrounding level, giving it a gentle slope from back to front.—EDWARD LUCKHURST.

## NOTES UPON FERNS.—No. 7.

### GLEICHENIA.

THE various members of this most beautiful genus have always been held in the highest esteem by all growers of plants, indeed they must rank as the aristocracy of the order. As a genus *Gleichenia* is characterised by a creeping rhizome, fronds rigid, opaque, and several times dichotomously branched, the pinnae being linear and pinnatifid; the ultimate divisions are small, orbicular, and often concave, or large, linear, comb-like, and plane, whilst the veins are either simply or pinnately forked. There are two very distinct-looking sets of these plants, and some pteridologists have established these as distinct genera; but they have so many points in common, and all resemble each other so much in general appearance, that I must perforce follow my old master, and regard them only as distinct groups of one genus. The first group, *Eugleichenia*, may be recognised by their small ultimate divisions, which are ovate, orbicular, and often concave or cucullate; sori punctiform, naked, often set in a hollow cavity, consisting of but few spore cases, the numbers usually varying from two to four. The second group, *Mertensia*, is recognised by its ultimate divisions being larger and plane, and the sori consisting of from eight to twelve spore cases. Again, species of this group have a more erect habit of growth than the first, which mostly assume the character of climbers. This, without going too deeply into distinctions, may be considered the principal characteristics of the genus *Gleichenia*.

The character and general appearance of these Ferns are so beautiful and distinct that they cannot fail to charm the eye of every beholder, and it is really no wonder that they are held in such high estimation by all lovers of beautiful plants; yet it is marvellous that, knowing the beauty and high commercial value of those we have, I say it is marvellous that collectors should allow so many fine species as are known to science to still remain desiderata in our plant houses at home.

*Gleichenias*, as before remarked, have long creeping rhizomes, a circumstance which will at once reconcile the cultivator to the fact that breadth and not depth is of the utmost importance to the development of a fine specimen. Again, essential as thorough drainage is to Ferns of all kinds, to these it is one of the chief points in culture, for no *Gleichenia* will remain in good health for even a short period with bad drainage and sour soil. Ordinary pots for young specimens will be found perfectly suitable; but as the specimens become large, shallow tubs will be found best, inasmuch as they furnish the greatest amount of surface-room for the wiry rhizomes to creep over. I have found these plants thrive admirably in good rough fibrous peat and silver sand, with just a dash of light sandy loam added to it; the drainage must be perfect, and then the plants will enjoy a liberal supply of water to the roots, but I never could believe they liked it upon their fronds from the syringe.

*Gleichenias*, like many other Ferns, are very liable to the attacks of scale and thrips. They must be carefully watched to prevent the progress of the first-named pest, because if they are allowed to increase they are difficult to eradicate, and render the plants very unsightly; whilst, should the latter make their appearance, it will be a tolerably sure indication that the plants are placed in a higher temperature than is congenial; and the remedy, therefore, will be removal to a lower temperature and slight fumigations with tobacco for two or three weeks, with an interval of about three days between each operation.

### EUGLEICHENIA GROUP.

*G. MICROPHYLLA*.—A very fine, free-growing, temperate-house species. The branches and rachis are furnished with short reddish-brown hairs; branches pinnate; pinnae pinnatifid and

smooth; segments sub-rotund, the margins being nearly plane or but slightly recurved, the upper surface deep green, paler below. It is a plant of scandent habit, fronds extending to an indefinite length and much forked. Native of Port Jackson and various parts of Tasmania.

*G. MICROPHYLLA GLAUCA*.—This very fine form differs from the normal state considerably in cultivation, being more robust in habit, and the pinnae stouter in texture; the upper surface is deep green, below it is beautifully white. It is a superb cool-house plant, at present rare in collections. Native of New Zealand.

*G. SPELUNCÆ*.—There would appear to be several forms of this fine species; the differences, however, have not been sufficiently defined to lead to the separation of such forms as distinct species. The differences I have noticed have been the greater size of pinnae and segments, some being closely set, whilst others are long and lax, and another form is to be found wonderfully ramified. The general appearance of the segments is somewhat ovate, and pale green above, glaucous and saccate below. It must take rank as one of the handsomest of its tribe. A cool-house species. Native about Port Jackson and various parts of Tasmania.

*G. SEMIVESTITA*.—Although having something the appearance of *G. microphylla* in a dried state, it is, nevertheless, sufficiently distinct under cultivation to be easily recognised from that species. It moreover enjoys a slightly warmer spot than the kinds previously enumerated. The fronds are dichotomously forked; the branches are clothed with numerous reddish-brown hairs, and, in addition, the rachis is furnished with a few stellate hairs; the segments orbicular-ovate, nearly plane, or but slightly pouched, and bright dark green above. A very handsome plant. Native of Malacca and New Caledonia.

*G. ALPINA*.—There is little doubt but in many parts of the three kingdoms this species would prove to be quite hardy, and form a charming addition to the out-door fernery. It seldom exceeds a foot in height. Fronds dichotomous; the pinnae about an inch long; segments orbicular, densely packed together, and bright green above; the young shoots profusely clothed with ferruginous hairs. It would appear to be abundant upon the high mountains of Tasmania, but at present is very rare in cultivation.

*G. DICARPA*.—A very elegant species, distinguished by its small orbicular segments with a broad recurved margin and deep pouch; the rachis is furnished with some pubescence, but the branches are quite glabrous. It is bright green in colour, and does not like any but the coolest treatment. Native of Tasmania.

*G. POLYPODIODES*.—In this we have a distinct and beautiful species, one which I have never seen but once in cultivation in English collections. The young fronds and the branches are more or less profusely clothed with dun-coloured hairs; segments ovate, deep green above, slightly glaucous below. This, like *G. semivestita*, should be provided with a snug corner. Native of the mountains of South Africa.

*G. RUPESTRIS*.—This is a fine bold-growing cool-house plant, somewhat rare, and only to be met with in the most choice collections. The stems are reddish-brown, and the pinnae very thick and coriaceous in texture; they are obtusely rounded, with thickened margins, deep green above, but glaucous beneath. As a simile it may be said to be a dense-growing coriaceous form of *G. speluncæ*, although thoroughly distinct from it. Native of New South Wales.

*G. HECISTOPHYLLA*.—With this species I shall conclude my remarks upon the first section of this genus. It would seem to be closely related to some of the others, and the differences in herbarium specimens are often very slight; when the plants are cultivated, however, they are easily discerned. The fronds are much branched; the ultimate segments small and saccate, bright green and glabrous; the branches and rachis profusely clothed with ferruginous hairs. An elegant cool-house species from New Zealand.—EXPERTO CREDE.

## THE CATHERINE AND OTHER OLD PEARS.

THE inquiry about the Catherine Pear recalls to my mind a cry of the street vendors of fruit some fifty years ago, for I perfectly remember "Fino Catherine Pears, six a penny, six a penny, Pears!" being called out in a large commercial town in 1822, on the same day as the details of the suicide of Lord Castlereagh were hawked about. I regret my memory does not enable me to give a description of the fruit, but believe it

was thought superior to the Crawford that figured in the streets a week or so later, but was not such a favourite as the Green Chisel, there sold under the name of Green Jack, while Jargonelle was the best of all. A later Pear had a fair share of popularity under the name of "Bergamy," an excusable corruption of Bergamot which in reality it was. My acquaintance with street trading being very limited I cannot say when the Catherine Pear ceased to be hawked about under that name, but it evidently had been popular, as had also the Portugal (or Portingal) Pear now, I believe, seldom heard of; but it is interesting to hear these old names which must have been familiar enough to all dwellers in towns. Perhaps those whose experience extends farther back than mine will tell us whether calling by their proper names fruits and other articles for sale in the streets was the general practice in former years, if so it was preferable to that at present adopted. Catherine Pears were in good repute with little boys and others before George IV. became king, but of the merits of the variety I have but an imperfect remembrance, and as the name has ceased to be noticed in catalogues I have sometimes been led to believe that it was one known or used only by the traders. Another question arises, Were the seasons at that time more favourable to the ripening of these fruits than at present day? This subject, however, is one bearing on other fruits more than the Pear, and deserves inquiry.—J. R.

### PEACH-FORCING.

I CAN quite understand that my old friend Mr. Gilbert should feel a little concerned about me and my Peach trees, when he was led to believe that the trees were shut-up seven or eight weeks before they flowered. The fact is, I was fully late in sending my short article on Peach-forcing, which was written three weeks before it was published.

Mr. Gilbert says that when he begins to force he likes "to force in the proper sense of the word." We should probably differ as to what constitutes forcing in the proper sense of the word. It sometimes means doing your work in the most artificial and expensive manner, when the same object might be attained in a more natural and economical way. Mr. Gilbert clearly proves that he does his Peach-forcing in the proper sense of the word—i.e., he forces at night and in the duller part of winter with strong fire heat. I use no more fire heat than I consider absolutely necessary to prevent the trees receiving a check during nights and dull days, and do not attempt to force at all at such times; but I do my forcing principally by solar heat in the light of day. He "keeps steady at between 55° and 60°," while I allow a range of temperature from 45° to 75°, and even as high as 90° when the trees get into good healthy growth. I had thought the days of keeping a fixed temperature were passed.

"Easy work this Peach-forcing," readers will say, if two people can do so radically different, and both of them succeed. Well, I am generally successful, and Mr. Gilbert says his plan has served him well for thirty years; but, oh! Gilbert, for shame! think of the price of coals and the tens you have wasted in that time!

But it is not a question of economy of fuel alone, the appearance, flavour, and general quality of the fruit have to be considered. The more forcing the less colour and flavour. My first house with Royal George Peach and Violette Hâtive Nectarine ripens from the middle to the end of May, and that with very little forcing "in the proper sense of the word;" consequently the colour and flavour are good. I do not know when Mr. Gilbert's fruit ripen, but I do not think it possible to get good flavour much earlier than this with the above-named varieties. Of course you can get Peaches to look at, but mine are expected to be fit to eat. Flavour is of more importance here than earliness. I have not yet had much experience with Early Beatrice, which I believe to be the best early Peach.

Mr. Gilbert kindly says he will give my plan (I cannot claim it as mine) of natural fertilisation an impartial trial; but I must tell him that unless he will adopt low night temperature I will neither be responsible for fertilisation or stoning. I believe the temperature has more to do with it than it gets credit for.

It is surprising to see how tenaciously our good old gardeners stick to the plan of leaving all the flowers and fruit on and waiting to see which will drop off their Peaches and other stone fruits. I am quite willing to admit that Mr. Gilbert and others of the same school are successful. A man of Mr. Gilbert's ability would make almost any plan succeed, but that

does not prove his plan to be the best. I cannot understand what is the use of eighteen out of the twenty Peaches on such a branch as that sent to the Editors. Similar branches on my trees have only two fruits, some only one, and I must think they swell faster than they would if there were twenty.

I have not said anything about the difficulty of keeping down insects with a high night temperature. I think most people know something about that.—WM. TAYLOR.

### THE HISTORY OF THE ROSE.—No. 1.

By far the largest portion of the following notes were written by the late Dr. Randle Wilbraham Falconer, and communicated by him to the Botanical Society of Edinburgh in 1838. To these notes others have been added, and we publish them together without distinction.

That the Rose was known to the Israelites, and is mentioned in the Old Testament, there can be little doubt. It was probably known to them by the pre-eminent title *chabalzeleth*, for, although that may have been the general name for a flower, yet, like the Persian *gul*, it may have been applied to the Rose as the flower—the superlative of the floral world. *Rosa spinosissima* and another species is a native of Palestine; but as we have no description of the flower in the Old Testament, whether these or some other flower is intended remains quite uncertain, though some flowers mentioned in its pages are translated into "Rose" in our authorised version.

When we descend to later ages, when descriptions of the flower were given, we cannot but be struck by the almost unvarying name of the flower. In Greek it is *Rhodon*; in German, *Rose*; in Dutch, *Roos*; in Danish, *Rose*; in Swedish, *Ros*; in French, *Rose*; in Italian, *Rosa*; in Spanish, *Rosal*; in Portuguese, *Roscira*; in Russian, *Rosa*; in Polish, *Rosa*; in Bohemian, *Ruze*; in Slavonic, *Ruxiza*; in Finnish, *Ruusu*; in Welch, *Rhos*; in Anglo-Saxon, *Rose*; and in Gaelic, *Ros*. Everyone of these seems to be derived from a root-word signifying red or ruddy.

The Rose is mentioned by Homer and by Anacreon. By the former in the hymn to Ceres, by the latter in many of his odes, through which we learn that it was a flower remarkable for the beauty of its petals; that it grew amidst thorns; that it had a divine fragrance; was of the colour of the human complexion; that it was the most beautiful of all flowers; "the queen of flowers;" the "flower of love."

Theophrastus and Pliny state that Roses may be distinguished one from another by the roughness, smoothness, colour, smell, and the greater or smaller number of their flower-leaves or petals. The latter writer, speaking of the Rose generally, thus describes it:—"The Rose grows upon a thorny rather than on an herbaceous plant; it grows also upon a plant similar to a Bramble. There it has an agreeable smell, but not perceptible at any great distance. The whole flower sprouts at first enclosed in a calyx full of seeds, which in a short time swells, and becomes pointed at the summit like green alabaster." By degrees the flower grows, opens, and expands itself, containing in the middle of its calyx the erect yellow stamina." This author then proceeds to enumerate eleven kinds of Roses, which, he says, were well known to the Romans. They are the following:—

- |                            |                           |
|----------------------------|---------------------------|
| 1. <i>Rosa Prænestina.</i> | 7. <i>R. centifolia.</i>  |
| 2. <i>R. Campana.</i>      | 8. <i>R. græca.</i>       |
| 3. <i>R. Milesia.</i>      | 9. <i>R. gracula.</i>     |
| 4. <i>R. Trachinia.</i>    | 10. <i>R. moscheutos.</i> |
| 5. <i>R. Alabandica.</i>   | 11. <i>R. coronola.</i>   |
| 6. <i>R. spinola.</i>      |                           |

Four other kinds of Roses are mentioned by Pliny in different parts of his "Natural History," but of these he gives no description; they do not appear to have been in such high repute as the above, though somewhat esteemed for their medicinal properties. These kinds are called *R. alba*, *pallida*, *spinosa*, and *quinquefolia*.

Of the first two kinds of the eleven more particularly described by Pliny, the Campanian was the earliest in flower, and the Prænestina the first which ceased blowing. The Milesian was of a very bright colour, and consisted of not more than twelve petals; it was the latest which came into blossom. The Trachinian Rose was less red than the Milesian. The colour of the petals of the Alabandic Rose inclined to white; it was less esteemed than any of the preceding. The

\* The "alabastro" was a perfume-box which the Rose-bud resembled in form.

*Rosa spineola* had a large number of very small petals, and was the least esteemed of all. The *Rosa centifolia*, or Hundred-leaved Rose, had many small petals. It grew in Campania in Italy, and in Greece near Philippi; to the latter place, however, Pliny says it was not indigenous. It grew also in the vicinity of Mons Pangene, and the neighbouring inhabitants, taking it from this place, cultivated it for profit. The Rose called *græca* by the Romans, but by the Greeks *Lychnis*, had only five petals; it was of the size of a Violet, and grew only in moist situations; it was scentless. The petals of the *Rosa græcula*, which were very broad, were rolled or convoluted into a ball; they did not expand, except when forced by the hand, and had the appearance of always growing. The *Rosa moscheuta* had petals shaped like an Olive, and grew upon a stem like that of the Mallow. ("Frustrum è caule malvaceo.") The *Rosa coroneola* was an autumnal Rose, and, when compared with other kinds of Roses, had a flower of a middle size. All of the above-mentioned Roses, according to Pliny, were destitute of fragrance, with the exception of the *R. coroneola*. The Prænestine and Campanian Roses obtained their names from their respective localities. The Trachinian Rose appears to have been a native of Thessaly, and grew near the city of Heraclea, called also Trachinia. The Milesian and Alabandic Roses were probably foreign kinds, the former deriving its appellation from Miletus, a city in the Island of Crete, where it was first found; the latter from Alabanda, a city of Caria, in Asia Minor.

Mentzelius, in his "Lexicon Plantarum," regards the Prænestine, Trachinian, and Milesian as varieties of what he calls the *Rosa rubra saccharina*, which he considers the same as the *R. græcula* of Pliny. Mentzelius and Clusius both agree in calling the Milesian Rose the Rose de Provence. Ferrarius, in his work entitled "Flora, seu de Florum Cultura," states that the Rose called by him "*Rosa alba multiplex*" has, by different authors, been regarded as either the *Rosa spineola*, Campana, or Alabandica of Pliny. He says, also, that some authors consider the *Rosa damascena multiplex* to be same as the *Rosa coroneola*, while others, again, think it is the *Rosa spineola* mentioned by Pliny.

The flower enumerated among the Roses by Pliny, and which was called by the Romans *R. Græca*, but by the Greeks *Lychnis*, is the flower mentioned by Dioscorides under the name *Lychnis stephanomatiæ*, or *Lychnis coronaria*. It is generally considered to have been a species of our present genus *Lychnis*, commonly known as the Rose Campion. Dioscorides says the "*Lychnis stephanomatiæ* is a flower resembling the white Violet, but of a purple colour." It was woven into crowns, hence called *stephanomatiæ*, or *coronaria*.

There is one other Rose mentioned by Pliny, but not classed by him with the kinds most celebrated among the Romans, namely the *Rosa sylvestris*. This Rose, called also *Cynorhodon* by Pliny, and by Scribonius Largus *R. canina*, grew upon a Briar, according to the former author, and had a leaf resembling the impress of a man's foot. Theophrastus, who also mentions this Rose, says it bore fruit of a red colour. Dioscorides agrees with this account, and says the fruit resembles the nucleus of an Olive. Pliny, however, states that this plant bears a black berry, which, Bodæus a Stapel remarks, no other author has mentioned, and considers that the passage in Pliny refers to another plant subsequently mentioned by that author. Among the thorns of the stem of the *Rosa sylvestris* grew a round sponge-like substance resembling a Chestnut; the presence of this excrescence upon this kind of Rose is also mentioned by Marcellus, an old writer on materia medica. Pliny says it grew particularly upon the *Cynorhodon*, and that it contained a worm or grub which produced the insects called cantharides. The same insects are mentioned by Aristotle to issue from a worm found upon the *kynakanthe*, or "Dog-briar" (?). In the spongy substance alluded to we recognise the moss-like prickly excrescences which are found upon all Rose trees, but especially upon the *Rosa canina*, and which are the habitations of the insect called *Cynips rosæ*.

Commentators on Pliny regard the *R. sylvestris* of this author to be the *R. Eglanteria* of Linnæus, now the *R. rubiginosa*, which, according to Fries, Linnæus for a long time referred to the species *R. canina*. The *Cynorhodon* of Theophrastus, the *Cynosbaton* and *oxyacantha* of Dioscorides, the *cynacantha* of Aristotle, and the *R. sylvestris*, *cynorhodon*, *cynosbaton*, *cynapanxim*, and *neuropaston* of Pliny have been generally considered as identical. There still appear, however, to have been some doubts upon this point which are not

yet satisfactorily explained. It would be uselessly occupying space to enter at length upon the consideration of this question. The *R. sylvestris* appears to have obtained its synonym *R. canina* or *cynorhodon* from a supposition that its root was a beneficial remedy for bites of mad dogs; an instance of its curative powers is cited by Pliny.

The Roses mentioned by Theophrastus are few in number when compared with the list given by Pliny; four only are enumerated, viz., 1, *Rhodon pentaphylla*; 2, *R. dodecaphylla*; 3, *R. eikosaphylla*; 4, *R. ekatontaphylla*.

The first of these is considered by Stackhouse to have been the same as the *Rosa canina* of Linnæus; the second has not been referred to any species with which we are at present acquainted; the third is thought to resemble the *R. cinnamomea*; and of the fourth, or Hundred-leaved Rose, Theophrastus says, "The inner petals are exceedingly small, for the blossoming is such that some are inward and some outward. The greater number of such," he adds, "are about Philippi."

Theophrastus gives no detailed account of the Roses he has named; he merely says that they are not large, and have not a pleasant smell. He enumerates the Rose tree among perennial and woody shrubs, also among those plants which have their fruit placed under their flowers, "a peculiarity," he remarks, "which, on account of its great size, is most plainly to be seen in this plant." Some classical writers, who have endeavoured to show that the odes of Anacreon which eulogise the Rose are frauds, have gone so far as to say that Theophrastus never saw a Rose, and support this opinion from the very cursory manner in which he notices the plant. It is impossible, however, to coincide with them.

ROYAL BOUQUETS AND DECORATIONS AT WINDSOR.—It may interest some of our readers to know that, in connection with the reception of the Duke and Duchess of Edinburgh at Windsor on Saturday last, Messrs. Veitch & Sons, of Chelsea, had the honour of offering to Her Majesty, the Princess of Wales, and the Duchess of Edinburgh, splendid bouquets composed exclusively of the rarest Orchids, Roses, and Lily of the Valley. The Queen and the Princess of Wales were pleased to receive theirs personally from Mr. Harry J. Veitch, Her Majesty retaining also that for the Duchess of Edinburgh, for presentation on her arrival at the Castle. The floral decorations for the banquet, given on Monday in honour of the newly-married couple, were very extensive. Five large groups of Palms, Musas, and other fine-foliaged plants, interspersed with choice flowers, were very effectively arranged on the grand staircase by Mr. Jones, the head gardener at Frogmore; whilst in the reception rooms the fireplaces were, as usual, most tastefully filled by Mr. C. Turner, of the Royal Nurseries, Slough, who also supplied all the plants and flowers required for the banquet table.

## TO YOUNG GARDENERS ON RENOVATING OLD FRUIT TREES AND OTHER SUBJECTS.—No. 4.

WHEN we see a tree producing foliage of an unnatural colour we may expect the cause to be at the roots, unless it is severe pruning under circumstances noticed in my previous paper. The only remedies are to lift the trees carefully and place the roots in fresh soil, and, if the situation is cool and wet, to aerate the border, planting the tree somewhat above the surrounding surface. There are trees whose roots and branches are so destitute of any sign of activity, and so diseased, as to be not worth the time and labour involved in attempting to renovate them, and it will be a gain to at once consign them to the rubbish heap; but, as a rule, if the roots are tolerably sound, the trees will soon form a good head if they are placed in a suitable medium.

Let us now suppose that a border of trees is to be lifted with the view of renewing it. It is always best when the work is begun to bring all the power possible to bear on it, so as to have it completed quickly; accordingly all materials that may be wanted should be ready, the places for depositing the removed soil chosen; and as this affords a good opportunity for alterations, any that may be in contemplation should be planned at once, in order to save future labour. Commence the work systematically as soon as the barrow roads are laid, and take out a trench about 2 feet wide and as deep as necessary

\* Illustrationes Theophrasti, &c. Auctore J. Stackhouse. Oxon., 1711.

the whole length of the border. Perhaps not much care of the roots is required here—the spade may be used. The trench having been cleared, either yourself, or the most trustworthy of the men, commencing at one end, should, with a steel fork, turn out the soil carefully the whole length of the border, taking about a foot at each time; and as the roots are loosened they are to be tied back, pegged to the surface of the border with a stick, and covered with mats; another man follows and clears away the soil which the first one has loosened; and when the latter gets to the other end of the border he again commences, and so on until he comes to the large roots that cannot be bent, and which are then carefully held aside by a boy or man while the soil between them is forked out. I will suppose that the man is now within 3 or 4 feet of the wall. He should then fork out an opening between the trees up to the wall; this done, fork away from the roots all the remaining earth, loosening what he can between them, and I think the tree will be easily lifted. It should be carefully removed to some other wall, well fastened, and the roots properly covered.

This having been done, the remainder of the soil should be taken away and the surface well levelled, giving a good fall to the front. Next take out a trench by the front edging (see *fig. 1*), 3 being the longitudinal drain to carry-off water. The width of the drain depends on whether it is to be formed of stones or pipes; it should be constructed to receive the water from the flags or concrete, be below the level of these, and must, of course, have an outlet as any other drain. Next cover the whole surface of the border with flags well cemented-in, or, if concrete is employed, it should be well laid and thoroughly settled before other work is done.

We will now begin to lay the air drains (4) in the plan, and which may be of stone or be pipes; if of stone they should be about 9 inches wide and 4 inches high. They are covered with

of the border. In my opinion there need not be so many of them.

The air drains should not be built solid but be just a form of a drain, every encouragement being given for the warm air that enters the shafts in front to penetrate the whole mass of the border amongst the 6 or 8 inches of rough rubble filled-in between the drains. I have the front openings from 14 to 20 feet apart, and so that they can be closed at will by means of a flat stone. I consider the back drains may be closed with advantage three or four hours after they have been opened, or when the cold air has passed out and we wish to store up some warm air. In other cases, where this attention cannot be given, both should be left open.

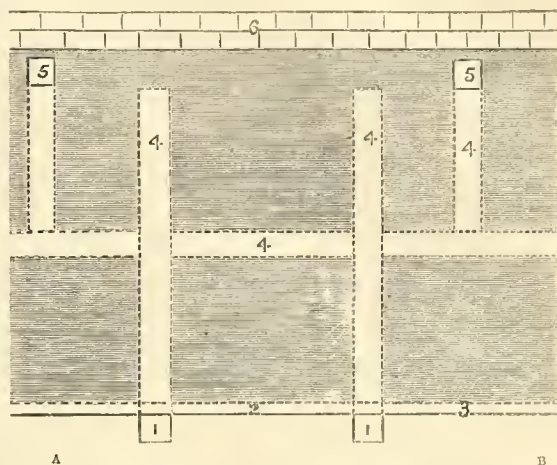
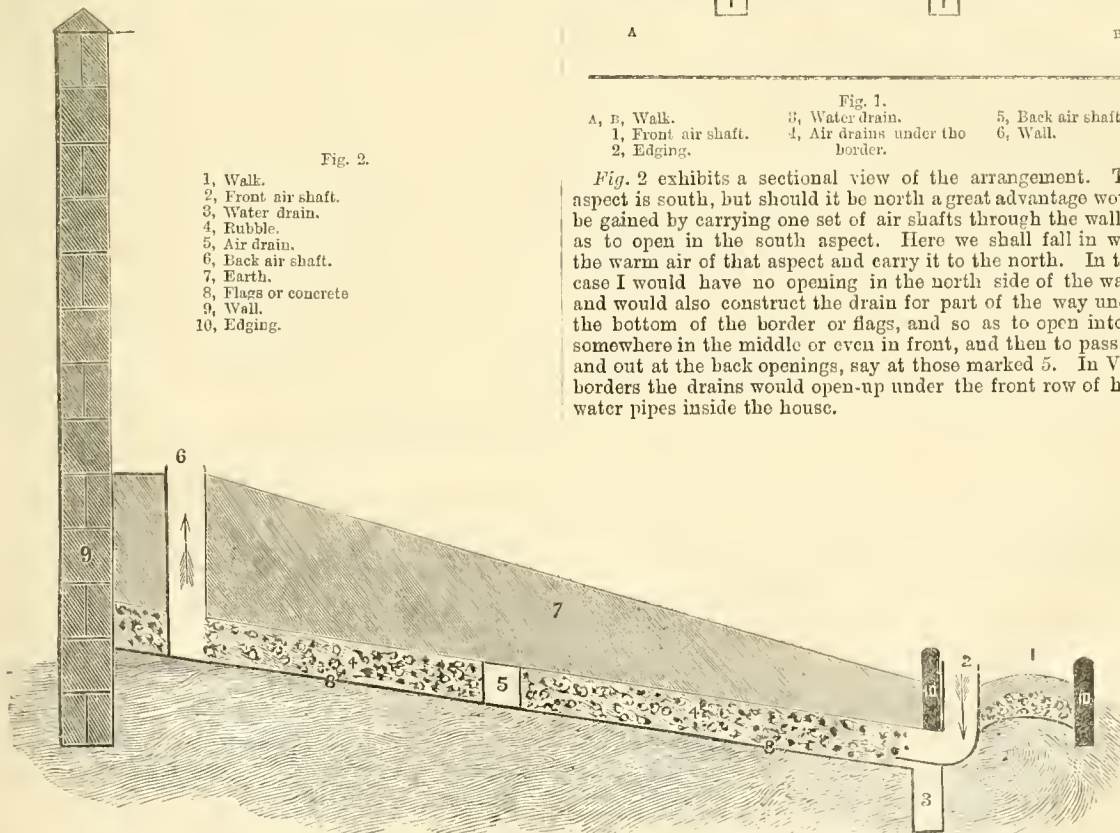


Fig. 1.  
A, B, Walk. 3, Water drain. 5, Back air shaft.  
1, Front air shaft. 4, Air drains under the border. 6, Wall.  
2, Edging.

Fig. 2.

- 1, Walk.
- 2, Front air shaft.
- 3, Water drain.
- 4, Rubble.
- 5, Air drain.
- 6, Back air shaft.
- 7, Earth.
- 8, Flags or concrete
- 9, Wall.
- 10, Edging.



“caps,” are carried over the water drain in front, under the edging marked 2, and open-up with a small shaft in the walk as shown at 1. Air shafts (5) are also carried up at the back; these should not be in a line with those in front, as that would cause a violent current, and the air would pass in and out without any perceptible advantage to the other parts

The drains being all laid, place a little litter to keep the drainage free, and the new soil may then be put on. If it is in a moderately dry condition it will bear a good treading, but if wet it is well to have planks to walk and wheel upon. Fill-up to the original level, 6 inches higher at the back perhaps will be all the better, and finish with a fine even surface. The

trees are now brought carefully and set in their places; the tops of the branches will be found higher than the wall, and must be headed-back to the required length. The roots are next carefully pruned, laid out, and covered with rich, light, sandy soil; old potting soil is what I generally use. This done, proceed to finish the border by putting on 8 or 10 inches more soil. It is well to cover the whole surface with a coat of leaves and dung. The best time to carry on this work is undoubtedly as early as the leaves assume their autumnal hue.

Young gardeners in adopting this system must be guided by circumstances, there is no hard and fast rule. The great and all-important thing to know is, What is best to do in any particular situation? This is not sufficiently studied. We see this system of ventilating borders of incredible benefit here; we may go to the next garden where it is carried out and find positive harm done; we may even see in one garden advantage and disadvantage from its adoption. Let us suppose that the garden is on the side of a hill—one part, say the south, may be standing high and dry—would you aérate that border because you have seen one in the neighbourhood which has been so treated and the trees are doing well, and without considering the natural position of the two gardens? Certainly not. Then, again, because the south wall does not require such a border, must you suppose that the north or any of the other aspects would not be benefited by it? Now, supposing this wall should be situated at the bottom of the hill, and therefore receive the whole of the drainage water, the trees being thus kept wet at their roots, without sun for their heads, does not common sense tell that while it is better for the health of the trees that the border should be sunk below the surface in a part of the garden which is high and dry, what moisture it receives being at once drained away naturally, yet in another part of the same garden trees would be greatly benefited if they were planted above the surface, or with the border ventilated? I have really experienced this in a walled garden of five acres, trees on the south wall being burnt-up, whilst those on the north wall refused to do well owing to wet and cold. I wish to make one exception of trees on the south wall—namely, fine, old, gouty, May Duke Cherries producing crops one does not often see. Aërating borders is an excellent system which has been cried down by some, especially with Vine borders, because they have found it turn out quite the reverse in their own case from what they expected by what they have seen in other places where the conditions were altogether different.

There are just a few points in connection with removing large trees to which I wish to draw special attention. First, it is almost impossible for a tree of any size to recover if it has not a certain amount of young fibrous roots. It is surprising how few will suffice to set all at work and maintain a tree; they should, therefore, be carefully treated, be kept from being bruised, and not be allowed to be exposed to the sun, frost, or dry piercing winds. No doubt a tree is occasionally removed without any such roots, and yet recovers, when other things are very favourable, but on the whole my experience leads me to recommend a different course. Let it remain for a year or two, and cut-in a portion of its roots, thereby inducing it to send out a mass of fibres before it is removed. The two most important conditions to ensure success in moving large trees or shrubs, after duly caring for their roots, are shade and moisture. It will be found necessary for the first summer to scrupulously attend to both; hundreds of trees and shrubs have been killed by neglect in this respect. Besides not allowing the roots to become dry, or the soil to crack (and its doing so can be avoided by a good mulching of long dung after it has been watered; but this covering on any soil is beat away in spring and in autumn), a good syringing once or twice a-day in dry weather, with a somewhat slight permanent shading, will work wonders. If I were asked which of the three is most essential, from what I have observed, especially since I took to this place, shade must undoubtedly be placed first; but in all cases I have used due care with the roots. I have moved some scores of large shrubs, &c., of fifty and sixty years' growth, and many of them much diseased, yet not one per cent. have died, and many have improved in an astonishing manner.

There is another important condition to be observed in removing shrubs and trees, and I am not sure but that I ought to have placed it second to shading, it is the maintenance of a proper balance between the branches and roots. It is hopeless to expect a tree will re-establish itself quickly if the branches are not few in proportion to the roots, in fact the more roots and the less head the stronger the growth that

follows. To obtain the best results with large shrubs a little light rich soil should be placed round the roots before the soil is replaced.—J. TAYLOR.

### TODEA (LEPTOPTERIS) SUPERBA.

VERY seldom do we see a good specimen of this lovely Fern, and yet it is of most easy culture. Description must fall short of conveying an adequate notion of its beauty. In offering these notes on its culture I do so knowing that there are many readers of our Journal who have their ferneries in smoky cities, and who may think this gem beyond their means. To such I offer these notes on its culture.

It is a native of New Zealand. The fronds are of a pleasing green, transparent, lanceolate, spreading gracefully, arching, and feathered down to the very base. The segments are very crowded, and instead of having the usual flat growth of other kinds they are so much turned upwards as to give the fronds a very rich and Moss-like character. I grow it under a bell-glass, and when it is well established and too large for the bell-glass have it in a frame made with doors to open in the front. It loves plenty of moisture, and care must be taken to secure a good drainage, formed of a layer of coarse crocks, and on these plenty of charcoal about the size of walnuts. On this place some pieces of sandstone and a few pieces of Derbyshire spar, and arrange them artistically, leaving a space on the top for the Fern, using a compost of good fibry loam and peat in equal parts, silver sand, and a good sprinkling of charcoal. Plant Lycopods here and there among the sandstone, as *Selaginella apoda*, *S. denticulata*, *S. denticulata variegata*, *S. Poulterii*, *S. stolonifera*, with *Pteris serrulata*, and a few choice *Adiantums*. They have a natural and pleasing effect.

Never allow the sun to shine upon this Fern or it will fade. Every morning, if sunny, shade it directly, and use the syringe freely. I have grown it successfully in the stove, also in a cool house.—F. P. LUCHEURST, Mill Bank Hall.

### TIFFANY PROTECTION FOR WALL TREES— POTATO CULTURE.

I HAVE this afternoon put up a very simple, cheap, and I hope effective, tiffany shading for my wall trees, the details of which may be useful to some of your readers. First my ironmonger made me some iron brackets of this shape, being, in fact, lengths of iron about three-quarters of an inch wide, bent to an angle and just turned up at the end, each side or limb being about 6 inches long. The upright one is pierced with two good-sized nail-holes the width of a brick (3 inches) apart. These are nailed against the wall at intervals of about 8 feet, care being taken that the nails are driven for security above and below a "header." On each pair of brackets I laid a deal board 10 feet long by 6½ inches wide, by three-quarters of an inch thick, thus forming a coping which projects about 5½ inches from the wall. On the upper side of this, close to the edge, I fastened my tiffany, turning it over a thin lath, and nailing both together to the coping. Underneath the coping I placed smooth poles leaning against the wall, and secured them by tying to each bracket, so as to prevent their being blown down by March winds. These poles are long enough to stand out from the wall at the bottom about 2½ feet. The lower edge of my tiffany—two widths sewn together—is again tacked round a lath, which is secured by screws to each of the poles. By thus putting the tiffany round the laths I hope I have effectually provided against the tearing out at the nail-holes by the wind, which has been so destructive in former seasons. My present arrangement ought with care to last me for years.

I ought to add that my garden wall has a row of tiles slightly projecting under the top course of bricks. This of course keeps the coping well in its place. For those, however, who have no such projection it would be easy to have a couple of holes punched in the upper limb of the bracket, and so to fasten the board on it by nails or screws.

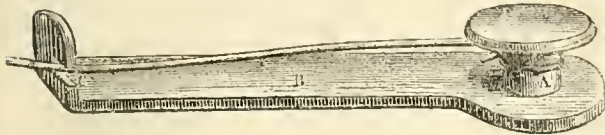
The brackets, which are well tarred, cost me 6d. a-piece. A coat of Carson's paint on the top will make all look neat. When the need for protection is over all can be easily taken away, the brackets remaining for future service.

With regard to "D., Deal's," question about Potato-digging, I wish Mr. Weaver would give us his experience. No man is better worth hearing on the subject. For myself I can only say that, acting on his advice, I have for years insisted on

every Potato in my garden being in the ground by the 28th of February, and every Potato out of the ground and in the Potato house by the 18th of August. I rarely have a diseased Potato, and last year I believe I had not one, though my crop was enormous.—H. G. M., Guildford.

### ANOTHER RAIDISSEUR.

It was only last week that we reproduced from the "Revue Horticole" a raidisseur which is at once cheap, simple, and effective; the same recommendations are also claimed, in that excellent periodical, by M. Carbou, of Carcassonne, for the form which we now figure. It consists of a small strap of



iron 4 to 5 inches long, four-fifths of an inch broad, and an eighth of an inch thick. The head is rather wider than the rest of the band, and rounded; riveted into it is another piece with a flat top, and through the standard (A), of this the wire is passed before fixing it to the wall or post. The wire is then wound up by a half turn of the band, B, and when tightly stretched passed into the notch at the other end, and thus held fast.

### JAPANESE GARDENING.

Shimonoseki, Dec. 1st, 1873.

THE weather here has continued very fine, and the farmers have finished sowing their Wheat and Barley crops, and most of the plants are up and look well, the showers of rain which have fallen at intervals having been most beneficial. When writing my last letter I omitted to notice the Umbrella Pine, which I find is very common in Japan. The finest specimens are found near the old Buddhist temples. I have seen some 80 and 90 feet high. They are trees of great beauty, and, being evergreen, they are a great acquisition to ornamental gardens. They have leaves of a deep green colour, arranged in whorls, each something like a parasol, and some have leaves and branches so dense that the stem cannot be seen. (This is *Sciadopitys verticillata*, respecting which the following particulars are given by Mr. Gordon in his "Pinetum":—"According to Mr. Fortune (who first sent living plants of it to Mr. Standish of the Royal Nursery at Bagshot, in 1861), it is a large pyramidal tree with horizontal spreading branches, which attains a height of from 100 to 150 feet, and from 10 to 11 feet in circumference 3 feet from the ground, and not a large bush or small tree from 12 to 15 feet high, as originally stated by Dr. Siebold in his 'Flora Japonica.' The Japanese, however, have several varieties, among which some are dwarf bushes, others beautifully variegated. Dr. Siebold considers the Umbrella Fir the finest Conifer of Japan, and one which presents an appearance as strange as elegant, in consequence of its innumerable ramifications, which always end in a parasol-like tuft of leaves. Dr. Lindley says the *Sciadopitys* is nearly related to the genus *Wellingtonia*, a statement which, from all appearances, seems very questionable.

"Its Japanese names are 'Koja-Maki' (the wild or Mount Kojasan Maki), and 'Inu-Maki' (the spurious or false Maki); while those of the Chinese are 'Kin-sung-Maki' (the pale yellow Maki), and 'Kin-sjo' (common yellow), on account of the leaves being of a pale or yellowish-green colour, especially when young."

I went across to the island of Kiu-siu on the 24th November. I took my gun with me, and I was enabled to kill more game than we could consume, principally snipe and wild duck. I shot six of the latter on the 26th. Pheasants are scarce here; I have only shot two all the season.

I think I have never told you that the street dogs here, as in every other district in Japan not opened to foreigners, show great enmity towards them. They evince their hostility in a manner not to be mistaken by barking in a furious manner; but they are great cowards, and always, as a rule, keep beyond your reach. There are, however, instances reported where they have attacked Europeans. There was one case where an

engineer from one of the Japanese mail-steamers was on his way to Sinagawa to obtain a conveyance to Tokio last year. He reported that after landing near the execution ground he was attacked by a pack of twenty dogs, and had to take refuge in the trees until a number of Japanese came to his rescue. The Japanese dogs are about the size of an English shepherd's dog, and something of the same colour; but are not of the slightest use except for their barking propensities at strangers. They are such a nuisance that I have found it necessary to kill numbers of them at Shimonoseki.

I was at Kokura on the 29th November, and went to see a wrestling tournament. This sport is highly patronised by all the higher classes in Japan, and the wrestlers themselves were formerly of the "Samouri" or two-sworded class. They are certainly the tallest and best-built men in the kingdom, some standing 6 feet 2 inches high. I will give you a full account of what I saw at this tournament, but before doing so I must inform you that there is no kicking or claspings the body below the belt allowed in Japan, the same as in the north of England. It more resembles the Cornish wrestling, which I saw when I was living in that county. The company of wrestlers I went to see at Kokura numbered sixty-six, and are perhaps one of the best selected *troupes* in Japan. They are from Osaka and Tokio, and obtain their living by exhibiting themselves at different large towns. The tournament took place in a very large circus, the ring being in the centre, and the boxes raised each to hold five persons at the back. The price for a box was one dollar 3/4. There is a ringmaster to stop the wrestling if he sees anything unfair, and two referees, one stationed at each side of the ring, by whom all disputes are decided when the ringmaster appeals to them, and their decision is final. The presents the first-class wrestlers receive from the merchants are numerous and costly. The champion wrestler had two hundred dollars in money given to him the day I visited the place, besides several dresses, &c., of great value. Before commencing wrestling the combatants are all sent into the ring in batches, each having the wrestler's apron on, which is most elaborate and costly, some having cost as much as six hundred dollars each, and none less than two hundred. They are worked in gold and silver, and reach with the gold fringe on the bottom from the waist belt to the ground. The younger wrestlers cannot wear this apron until they have passed a Government examination in Tokio, to prove that their skill entitles them to use the badge, which is considered highly honourable. On the day in question the circus was crowded to excess, it being one of the two great days for presenting presents. This company by the Government charter which they hold can only exhibit on seven days at any provincial town, and ten days at either Tokio or Osaka. We arrived at the circus about a quarter to one o'clock, and punctual to their time (one o'clock) the first-class wrestlers presented themselves, after which the wrestling commenced, and did not finish till nearly five o'clock. I was very much pleased with it, as there is nothing rough or unmanly in the sport. All the wrestlers have a superstition that if they throw down a handful of salt they will get the best start; therefore each one sprinkles salt before he goes into the centre of the ring. It is not absolutely necessary for the winner to throw his man; if he can only force his opponent out of the circle that is sufficient. After the wrestling is over the presents from merchants, gentlemen, and others are presented to the winners, consisting of almost everything you can mention, from money to valuable dresses, blankets, hearthrugs, &c.

On the evening of the 27th we experienced a rather severe shock of an earthquake. I was at Kokura, and at about 11.20 p.m. I was awoke by the unpleasant sensation of the shocks, which resembled the motion of a ship at sea in heavy weather. The shocks lasted for about five minutes altogether. I am happy to say that earthquakes appear to be dying-out in this beautiful country, and are now not even half so numerous as when I arrived about two years since.—J. TASKER FOSTER.

ROYAL HORTICULTURAL SOCIETY.—General meetings of the Society for the election of Fellows, &c., were held on the 21st of January, 18th of February, and 4th of March, when the following candidates were elected Fellows—viz., George S. Duff, Miss Lilburn, Mrs. McLean, Mrs. F. W. Maclean, Gilbert McMicking, Mrs. Alfred Morrison, Mrs. Paul, Herbert H. H. Ricketts, Lieut. General Sir John St. George, Charles Henry Sladen, Thomas Sutherland, Miss Emma Taylor, J. Hudson Watson, Major-General Beadle, R.E., Major E. J. Charter, Lady John Chichester, Robert C. Driver, Mrs. Dunville, Mrs. John Fletcher, Mrs. W.

\* Maki is the name commonly applied, both in China and Japan, to all the large-leaved Yew-like plants, such as *Podocarpus*, *Sciadopitys*, &c.

Hollins, Dr. J. Kennedy, George Paul, Henry Webb, Rev. B. Winthrop, Mrs. J. F. Wyse.

### THE BROWN SCALE ON ORANGE TREES.

THE only mode I have found successful in exterminating this pest has been to cut down all the branches to 5 or 6 inches when the wood is ripe; we then scour the leafless branches five or six times with soft soap and water. In about nine months after this severe operation the tree becomes as large as before, and the shape, by a little tying, perfectly symmetrical. I have at this time model specimens which had been treated in this way. The same plants had undergone the same operation eight or nine years since, when the scale had been exterminated for about seven years; but these plants, having been placed in an orchard house with trees infested with scale, bore leaves covered with black sticky matter which no washing could remove. It is impossible to wash off the young of the scale so as to get rid of them entirely. The plan I have mentioned destroys them for ever. It is almost worth while to cut down an Orange tree in this way merely to form handsome bushes. The only sacrifice is one year's, not growth, but black leaves. The trees become even larger than before.

My trees are the Tangierine; they bear from five to seven dozen of fruit, considerably larger than those for sale in Covent Garden. The trees are in flat tubs, which are capable of carrying a large amount of well-rotted dung on the surface. These tubs were made of common creosote barrels cut into two, the inside having been plastered over with thick limewash. These model trees will shortly be a mass of bloom, all of which I have ordered the gardener to retain for a wedding, which melancholy (?) event is shortly coming off in my family. After this the bloom will be thinned to the necessary quantity.—OBSERVER.

### PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

*ODONTOCLOSSUM ROEZLI.* *Nat. ord., Orchidaceæ. Linn.* *Gynandria Monandria.*—"It is stated to be a native of New Grenada, where it was discovered by M. Roetzl, whose name it bears; and was flowered by Mr. Bull in October last, to whom I am indebted for the opportunity of figuring it. It is a superb plant, and in respect of the pearly whiteness of the flower more admired by some than even *O. vexillarium*."—(*Bot. Mag., t. 6085.*)

*BAUHINIA NATALENSIS.* *Nat. ord., Leguminosæ. Linn.* *Decandria Monogynia.*—"My first knowledge of this elegant little shrub was derived from specimens collected in Natal by Mr. Moodie, and communicated by Mr. McKen, the late energetic Curator of the D'Urban Botanic Gardens, in 1869. These were followed by pods with ripe seeds in 1870, plants from which flowered for the first time in September last. It is closely allied to the African and Indian *B. tomentosa*, *Linn.* (tab. nost. 5560), and especially to a nearly glabrous and small-leaved variety of that plant from Port Natal, but the leaflets are perfectly free, the flowers much smaller, and the stamens quite different."—(*Ibid., t. 6086.*)

*ARABIS ELEPHAROPHYLLA.* *Nat. ord., Crucifæræ. Linn., Tetradyamia.*—"Of the large genus *Arabis* almost all have white flowers; in a very few species they are yellow, and in this alone of those known to me do the colour (pink) and size of flower together recommend it for cultivation. It is a native of San Francisco, in California, where it was discovered by David Douglas in 1833, and has since been collected by Bridges, Brewer, Bolander, and others, and is described as a great ornament in March on the hills of that State. Professor Asa Gray, of Cambridge, was, I believe, the first to send ripe seeds to England—this was in 1865—from which plants were raised at Kew, and by Mr. Thompson, of Ipswich, if I recollect aright; but it was not till quite recently that the plants thrived (from seeds sent by Commissioner Watt, of the Agricultural Department of Washington), and appeared in their full beauty. It flowered at Kew in January in a cool frame, where it has hitherto thriven better than in the open border or rockwork; it is, however, doubtless quite hardy, and would succeed equally well out of doors, where, from its beauty and early flowering, it is sure to become a great favourite."—(*Ibid., t. 6087.*)

*NUNNEZHANIA GEONOMEFORMIS.* *Nat. ord., Palmæ. Linn., Dioecia Hexandria.*—"This little Palm was received at Kew from the Royal Gardens of Berlin in 1856, and flowered in the Palm house in May, 1859, and repeatedly since. From its

dwarf habit, abundant foliage, and graceful male inflorescence, it is one of the most elegant of the beautiful genus to which it belongs. It is a native of Guatemala, whence it was introduced by Warsiewicz, and named by Wendland. The Kew plant, which in 1858 had a stem only a few inches high, with four naked joints, has now a stem  $3\frac{1}{2}$  feet high, which presents sixty-four joints between the rootlets and lowest leaf base. It is stated to have borne sometimes male and sometimes female spadices."—(*Ibid., t. 6088.*)

*RHIPSALIS HOULLETH.* *Nat. ord., Cactaceæ. Linn., Icosandria Monogynia.*—Believed to be a Brazilian plant. "This *Rhypsalis* has been cultivated for some time in the Royal Gardens, where it flowered first in November, 1872, and it has been received also from Mr. Corderoy, who sent us flowering specimens to be named in the same month of 1873. Quite recently Mr. Green contributed a fine plant of it from Mr. Wilson Saunders's late collection, which came from Paris with the name I have adopted. I have failed to find any description of this species in any horticultural or botanical work. I may here mention that the difficulty of running down names of garden plants is, through obvious causes, becoming immense, and will soon be insuperable. I can recommend no more useful object to a horticultural society than the organising a committee for the collection and classification (with references) of the names of all plants introduced into cultivation, together with the countries the plants come from, and their date of introduction."—(*Ibid., t. 6089.*)

*ALPINE AURICULAS.*—*Napoleon III.* and *Susie Mathams.*—"Few of our popular flowers, have, during the last few years, made greater strides towards perfection than the Alpine Auriculas, of which wonderfully fine groups have been staged each succeeding spring by Mr. Turner, of Slough. It is to this well-known successful grower of florists' flowers that we are indebted for two of the most distinct and attractive of these alpine forms, both of which were awarded first-class certificates by the Royal Horticultural Society in May last. The variety named *Napoleon III.* is remarkable for its dark crimson-maroon ground colour, and clear, smooth, golden paste; it is a richly-coloured and highly-attractive variety, of extra fine quality. *Susie Mathams* is quite distinct, and is also a very pleasing flower; the ground colour is a deep purple, shaded off at the edges to bright lilac, and the paste is smooth and straw-coloured. Though not considered equal in value to the Show varieties, these Alpine varieties are exceedingly pretty objects, and most desirable as decorative plants from their well-marked colours."—(*Flor. and Pom., s. 3., vii., 49.*)

### SYDNOPE HALL,

THE RESIDENCE OF R. B. BARROW, Esq.

THE beauties of the cluster of villages of which Matlock consists have been so long and so much descanted on, the virtues of its waters so extolled, that there is little to be said upon them that is fresh, but no one on entering Matlock-Bath for the first time can fail to be impressed with the aspect of this the only one of the group which is entitled to rank as a town. The high steep hill directly facing the railway station has an imposing effect by day, and one still more so at night, when the lights twinkle from the windows along its face; we say from the windows, for, be it known, the streets are not lighted with gas—in fact not lighted at all. But we must not pause at Matlock, nor stay by its High Tor, a precipitous rock more than 300 feet in height, nor stop by the Derwent, whose rapid current courses through the valley between the rocks, at times becoming a torrent; our way is farther on to Sydnop, which overlooks a dale celebrated for its beauty—that of Darley.

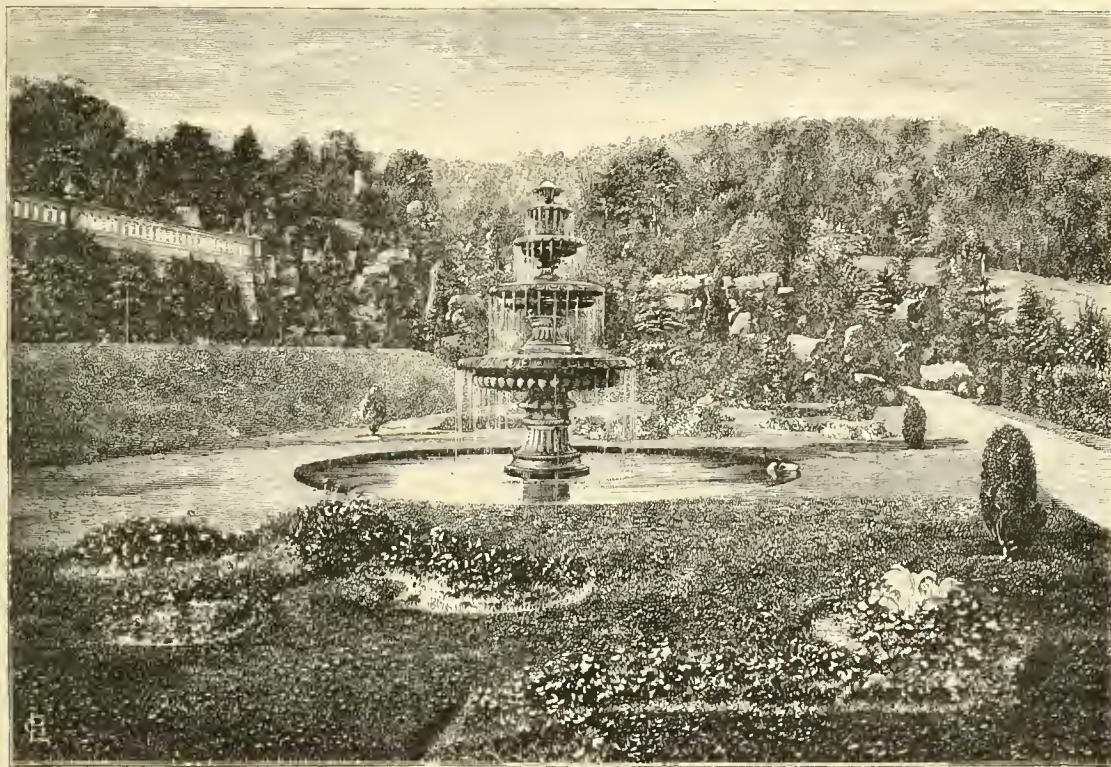
Sydnop Hall is situated on the southern side of a steep hill, which northwards partakes more of the character of a tableland. The position is well chosen to secure warmth and shelter, independently of plantations made with the latter object, and for ornament as well; it is also well chosen, as commanding the view of a wide and deep valley, of a steep hill beyond, and wood and water likewise enter into the scene. The kept grounds are entirely in the vicinity of the mansion; and in laying them out the natural conformation of the ground has been followed by throwing them into terraces, the one overlooking the other, and the whole the valley with the wooded hill beyond. In this valley, be it noted, there are thousands of *Rhododendrons*, many planted, but the overwhelming majority seedlings which have sprung up everywhere, the soil being extremely favourable to this plant. What a gorgeous display they must make when in flower, those who have seen the Knap Hill and Bagshot

collections will readily imagine. In front of the upper terrace, forming its southern boundary, is a dwarf well-kept Yew hedge with embrasures cut in its top to give a better view of the gardens and valley below, while the narrow border at the back is planted with Hollies and other shrubs, the wall itself being partly clothed with Ivy, partly with Wistaria, Roses, *Jasminum nudiflorum*, and other suitable plants.

We next pass down to a Strawberry garden on a slope, originally designed as a small flower garden, to which purpose it may yet revert; but this though neat is somewhat out of place. At the east end is a fine *Wellingtonia* estimated at 24 feet high, and various other Conifers which, like the *Rhododendrons*, seem to thrive admirably; *Deodars*, *Hemlock Spruce*, and *Araucaria imbricata* being represented by several handsome specimens. A beautiful lawn bordered with *Rhododendrons* is the next feature, and from this the eye catches

sight of Sydnop Stand on the opposite hill, which in the distance looks like some well-preserved relic of the past, but which a closer inspection shows to be of modern erection, but whether or not built on the site of a structure of more remote date we cannot say. From the extensive range of country which it commands, the probability is in favour of its being in the place of some watch-tower or stronghold of other days.

Proceeding towards the mansion, on the north side of which the bank is clothed with mixed shrubs, *Araucarias*, and other Conifers, on the south side we find the walls partly covered with Ivy, and eventually they will in all probability be wholly so clad. On the lawn in front are circular beds of hardy Heaths, as *Erica carnea* and *vulgaris Alportii*, which have a neat appearance at all seasons, and accord well in character with the wild beyond, of which there is here an extensive view. There are also some fine standard Portugal Laurels



FLOWER GARDEN AT SYDNOPE HALL.

averaging nearly 9 feet high, and at no great distance off is a tasteful fountain.

We now pass by a rocky walk into what is called the lake garden, from its leading feature being a small piece of water broken up with rockwork. It has no pretensions to being a lake as a landscape gardener would understand the term, for there is no expanse of water, but the rockwork is so well arranged that the effect is pleasing—even bold, for the stones used are the large masses which abound in the district, not cemented bricks and burrs, which in such a county as Derbyshire would be simply ridiculous. At one point a good-sized *Deodar* with its lower branches drooping into the water has a picturesque and harmonious effect.

The flower garden, which comes next, is of simple design with a handsome fountain in the centre, but details of its summer planting would be useless without the aid of a diagram. Suffice it, then, to say that Mr. Young, the intelligent gardener, has studied the bedding-out in the London parks, and adopted from the practice there what is suitable to his own particular case. Variegated and coloured-leaved plants, which are more to be depended on in the north than flowers, are the principal materials; *Centaurea*, *Perilla*, variegated and *Tricolor Geraniums*, and *Golden Feather Pyrethrum* being those most used. The main feature of these gardens is the rockwork, which is introduced again and again in their various parts, and accords well with the natural surroundings of the grounds. The stones

are in great masses of several tons weight, and in their arrangement art is not painfully evident; on the contrary, the whole of this work has a natural and pleasing appearance, water trickling down here and there among the rocks, which afford nooks for many a Fern, besides holding soil enough in their crevices for the support of low-growing shrubs, and on the upper portions the *Lawson Cypress*, *Deodars*, *Hollies*, and *Rhododendrons*. Of the latter numerous seedlings have sprung up everywhere, even to the water's edge. The walks, it must be added, are of Derbyshire spar, which is softer to walk upon than gravel, and always looks bright and clean, while here, at least, it has the additional recommendation of cheapness.

A woodland walk leads eastward from the dressed ground along the face of a hill, but the transition is not sudden, as the way is through shrubby borders and past groups of Conifers, including *Araucarias*, *Wellingtonias*, the *Douglas Fir*, and several thriving specimens of some of the newer *Pinuses*. The hill affords a fine view over *Darley Dale*, and of the mountains of the Peak, as well as the woods in the direction of *Chatsworth*; while southward the prospect is equally bold and varied. This walk passes over a waterfall which rushes down in a broken stream from a height of some 70 feet above the walk, and continues its course into the valley altogether for a distance of about half a mile. In quarrying

\* From a photograph by Mr. Clark, of Matlock.

for stone on the opposite side of a ravine masses of rock had fallen over, and these constitute the bed over which the water has been conducted, forming a grand waterfall, which owes more to nature than to art.

The kitchen garden is also on a slope facing southward, and forms a long strip of no great extent. The principal glass structures are three vineries—namely, a lean-to as an early house, in which are also Strawberries and Azaleas; a ridge-and-furrow Hamburgh house, in which the Vines will be started about this time; a Muscat house; and a greenhouse, in which there was a fine show of Chinese Primulas. In a smaller house were greenhouse Ferns, Roses, and a few Orchids. Other small houses were chiefly filled with bedding plants. The glass, however, is a comparatively unimportant part of the establishment; nor is fruit-growing out of doors carried on to any considerable extent, the claims of the place to notice resting on its fine natural position and the advantage to which this has been turned. Too much has not been attempted, and the extent of ground under keeping is not very large, but everything has been carried out tastefully and well, and the hard-working gardener, Mr. Young, deserves great credit for the excellent order which prevails in all departments, especially as he has so little assistance.

#### DR. NEILL ARNOTT.

DR. ARNOTT, eminent as a physician and master of many sciences, died on the 2nd inst., at his residence, 2, Cumberland Terrace, Regent's Park, and his memory claims to be preserved in our pages, specially for having benefited cultivators of fruit and exotic plants, by the invention of what is known to all gardeners as "Arnott's stove." The *Times* tells us that he was a native of Upper Dysart, near Montrose, and was born about the year 1788. He was a fellow pupil with Lord Byron at the grammar school at Aberdeen, and afterwards graduated at the University of that northern city, of which he has been at different times a munificent benefactor. Coming to London in 1806, he became a pupil of Sir Everard Home, through whose influence he obtained an appointment as a surgeon in the East India Company's medical service. Much of the experience which he gleaned in the East he afterwards turned to good account in his "Elements of Physics." Settling in London in 1811, he soon obtained a large practice, and in 1815 was appointed physician to the French Embassy and shortly afterwards to the Spanish Embassy. In 1827 he published the work above alluded to, which has since gone through very many editions and become a text book, being an amplification of certain lectures on the application of natural philosophy to medicine, which he had delivered some years previously in one of the hospitals. In 1838 he gave to the world his "Essay on Warming and Ventilation," and carrying his scientific theories out into practice, he devised the "stoves" which bear his name, for which invention he was rewarded by the Royal Society with the Rumford Medal several years afterwards. For this and for other novel applications of science to the treatment of disease and the preservation of the public health, the members of one department of the Universal Exposition of Paris of 1855 awarded to him a gold medal, to which the Emperor added the Cross of the Legion of Honour. In 1835 Dr. Arnott was appointed a member of the Senate of the University of London; in 1837 he was named one of the Physicians Extraordinary to Her Majesty, and in the following year elected a Fellow of the Royal Society. In 1854 he was requested by the President of the General Board of Health to become one of his Medical Council. As the inventor of the "Arnott stove," the "Arnott ventilator," and the water bed, for which many a sufferer owes him a debt of gratitude, it is not likely that his name will soon be forgotten; but it deserves to be recorded in his honour that he constantly refused to patent his inventions, from the wide use of which he might have reaped, had he pleased, a handsome income. This, however, he declined to do; he sought a higher reward than that which money could have given him; and accordingly what he sought he found before his decease.

#### THE CULTIVATION AND AFTER-TREATMENT OF GLOXINIA, GESNERA, AND ACHIMENES.

In starting the roots of Gloxinias (which may be done every six weeks if you have a hothouse) they should be taken out of the old soil and repotted into 4 or 6-inch pots, according to the size of the tubers, in a compost of light sandy peat and leaf

mould, and a small portion of well-rotted cow dung, which will enrich it, taking care to give plenty of drainage.

The tubers of the Gloxinias and Gesneras will only require to be pressed on the surface of the soil. Achimenes will require to be covered with at least half an inch of soil; then place in a warm close frame in the greenhouse, so that they may get plenty of light. There is nothing to beat a pit to grow them to perfection, with a good moist bottom heat from a bed of tan, dung, or leaves—the latter is preferable, being easily procured—also a lasting nice sweet temperature of from 60° to 70°, when they will make free growth. Give them plenty of water. It is as easy to grow good Gloxinias, Gesneras, and Achimenes as it is a few Cucumbers; and an amateur can have them do well in his greenhouse or pit. Use the syringe rather freely as they grow; and as the temperature rises it will with these, as with most other subjects, induce clean and vigorous growth. The thrips, one of the worst pests of our greenhouses, will attack this class of plants with avidity, more particularly the Achimenes. Even the bloom will not be spared if they are allowed to get ahead. They can also be well grown in ordinary frames.

About the middle of March prepare fresh stable manure, in the same manner as for early frame Cucumbers, then let the same quantity of leaves be collected and mixed with the dung, sufficient to form a good substantial bed, with a steady heat of about 70°—let the dimensions of this bed be about 3 feet larger every way than the frame to be used—cover the whole with 6 inches of soil of any kind, or sifted coal ashes, for plunging in the pots or pans. The end of March will be time enough to put in the tubers, taking care to use soil warmed to the temperature of your frame or pit; shut up close for a few days, and give no water. Open the sash every fine morning to prevent the heat rising above 75°. Aim at a night temperature of from 55° to 60°. After a few leaves have shown themselves, water carefully, and sprinkle over the leaves in the after part of the day, just before the sun is off the glass, and shut up immediately. Should we get a spell of cold weather, and the thermometer indicate a lower temperature, renew the heating material by removing the outer portion of your bed by cutting quite to the bottom, then replace with fresh hot stable dung, or dung and leaves. This will not, however, require so much preparing as the dung for the original bed, as the excessive heat will not come in immediate contact with your plunged pots, your object being at this time to maintain a steady heat of 75°. Water of nearly the same temperature as the frame, or at least tepid, must always be used at this season, and shade from the midday sun. As they start into flower give more air, and plenty of water; and as they expand, remove them from the frame to the greenhouse, first to the warmest, then to the coolest part of the house, to prolong their season of bloom. After they have done flowering, put the earliest batch in a warm place out of doors. Water moderately, each week giving less, to encourage them to go to rest. Later batches, after flowering, can be placed on their sides under the partial shade of trees, or a wall, where they will get sufficient sun to thoroughly ripen them. By the end of September, or early part of October, they ought to be all brought into their winter quarters until wanted to perform their routine of work again.—(*American Gardener's Monthly*.)

#### NOTES ON VILLA AND SUBURBAN GARDENING.

*Culture of Hardy Annuals.*—About the beginning of March commence sowing the seed after the following manner:—Stir the soil, and make it firm with the hand if it be light; if not, with a small hand-hoe or fork; then, with the finger, draw a circular drill of about 6 inches in diameter in the circle, and 1 inch or less deep, according to the size and habit of the plant intended to be sown. Cover the seeds lightly with moist soil, and place an inverted flower-pot over them if convenient to do so; allow the pot to remain until the seeds have begun to grow, then prop it on one side 2 or 3 inches high until the plants are able to bear the weather, afterwards remove it altogether. Covering the seed with a pot answers several good purposes: First, it keeps the soil moist until the seeds have vegetated; second, the sun shining on the pot causes a reflection of considerable heat; third, it screens them from the spring frosts; fourth, it prevents the soil from being washed off the seeds, or the seeds themselves being washed away by heavy rains; and fifth, it preserves them from birds and mice. When the plants are about an inch high they must be thinned-out according to the kind, that those remaining may be able to grow and flower strongly. The height the plants grow must also guide the person as to what part of the border they ought to occupy, which,

where the selection is choice, may be known by referring to a nurseryman's list.

The *potting of plants* is an operation easily performed, though the principles upon which success is founded are not so well understood—a fact rendered sufficiently obvious by the miserable specimens too generally met with. And why is this? Simply because the cultivator, instead of examining for himself whether his manipulations are in accordance with the laws of Nature, rests satisfied in following the footsteps of his predecessors without inquiring whether their practices were right or wrong.

It is an undoubted fact that all plants like fresh soil and leaf mould, and any person who has a supply of these two, with good peat and silver sand, may, without any further assistance from soils, grow any plant.

A plant in a pot is in the most artificial state in which it can be placed, as its roots, instead of being some degrees warmer than the atmosphere which surrounds them, as they would be if planted in the natural soil, are, from the current of air constantly passing round the pot, and the consequent evaporation from its surface, some degrees colder. This circumstance alone is enough to account for our precarious success; but when, in addition to this, it is recollected that the roots are constantly alternating between drought and moisture, that they are violently excited at one time, and actually flagging for want of water at another, the wonder is that the cultivation of delicate and fine-rooted plants is not attended with more disappointment than has hitherto been experienced.

The general method pursued in potting plants, till within the last dozen years, was to sift the soil as fine as possible, to use little or no drainage, and when the plant required more pot-room, to give it only a very small shift, and that at some stated period.

Ladies who love gardening, and have a limited number of favourites which they tend with their own fair hands, are often at fault with reference to the soil which they should employ for potting. The soil that will suit plants in general I have given above; and as this is the season when the plants in the pits and frames which have survived the winter require repotting, the amateur must make himself acquainted with the best method of performing the operation, that his collection may have a good chance of future development. My observations on this subject will principally regard those who have not a greenhouse, and will refer to those classes of plants which may be kept with care during our winters in frames, such as Pelargoniums, Fuchsias, Calceolarias, Verbenas, Petunias, &c. These having been stored away in very small pots, must now be transferred to more roomy quarters, and finally potted previous to blooming.

The *fumigating* of plant houses and frames is a troublesome matter, especially to amateurs, and hence the following plan which I have practised lately may prove interesting to some:—Provide a strong solution of nitre in water, in which soak some sheets of strong brown paper, and afterwards dry it slowly and cut it into lengths of convenient size, the largest 18 inches by 12 inches; then get some strong tobacco and strew it thinly over the paper, and with a coarse pepper-box dredge in a good coat of common cayenne pepper, wrap the whole up loosely like a cigarette, paste the end over, and when dry it is fit for use. Two or three of these suspended by a wire under a greenhouse stage, and lighted at each end, will quickly settle the accounts of the green fly and thrips, and that with comparatively little trouble; indeed, if a quantity of these cigarettes are kept ready made, a few plants may be put into a pit or small room and be cleaned, at least have their insect pests destroyed, in a very short time. By using cayenne much less tobacco is required, and the effect of the two combined is most deadly; for as the cigarettes will burn for a considerable time, say an hour or more, it is impossible for insects to live in an atmosphere so thoroughly suffocating.

As the season for grafting is at hand, it may be noted that the appearance of Thorn hedges may be much improved by grafting the scarlet and other varieties on the top shoots. These should be allowed to grow up at different distances along the hedge, which should be regulated according to the size of the garden and the taste of the amateur. A few hardy Roses may also be planted in the fence, and trained in it. When these are in bloom the blossoms projecting a little beyond the hedge only appear, and render it very ornamental. Some of the Roses might also be budded on tall stocks above the top of the hedge as standards.

*Vegetables.*—This is an important time for getting in crops of several kinds. Ground should be in readiness for Onions, Carrots, &c., which should be sown in drills as soon as the weather will permit. Of the former the Strasburg and James's Keeping are good kinds. Make up deficiencies in Cabbage rows, and sow a small patch for succession in a warm border. The Early Battersea, which has numerous aliases, is as profitable a kind as any. Of Potatoes, a few Ashleaf Kidney may be planted for an early crop.

*Fruit.*—See that all standards are now pruned, and that the training of wall trees is finished. This is a good time for grafting Apples, Pears, &c.

*Flowers.*—As bulbs are all above ground, flower borders may now be forked-up, giving them a dressing of leaf mould or rotten dung. Herbaceous plants that are spreading too much should be divided, so as to occupy less room. Everything about the villa should be trimmed-up and kept neat, as this is always a mark of taste and industry.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

THE nights have been cold, the thermometer falling occasionally below the freezing point. This has served to retard the blossom on the fruit trees, yet the Pears, Plums, and other hardy fruits are in a forward state; all are well set with blossom buds. A correspondent writes for information about the *Gooseberry caterpillar*. Wherever the bushes were overrun last year, and if no steps have been taken to destroy the larva, there is almost a certainty that they will again be attacked. If spent tanner's bark can be obtained readily and fresh out of the pits, this, spread under the bushes to the depth of 2 or 3 inches, will destroy the larva which are buried there, but it ought to be done at once. When ground is being trenched during winter, the surface soil to the depth of 3 inches should be removed from under the bushes and buried in the bottom of the trench; fresh soil must be taken from the ground that is being trenched to supply the place of the old.

Morello Cherry trees on the north wall are very forward, they have just been nailed. Old trees of this sort are sometimes disfigured by some of the branches dying-off. These must be cut out and the live wood removed to fill up the blank spaces. As the Morello does not form spurs but bears on the young wood, this must be nailed-in more thickly than is usual with Elton, May Duke, and other large-leaved varieties. Where wall trees are in flower see that the protecting material is let down whenever there are evident signs of frost.

Planted out the old roots of *Sea-kale* that had been forced, also the smaller roots left over from the plants raised from seeds sown a twelvemonth ago. The ground had been previously trenched and manured; and in planting, some coal ashes were placed round the roots.

Allusion was made a few weeks ago to the merits of some of the new American *Potatoes*. Amateurs and others who may wish to try some of them will find the Extra Early Vermont the most valuable for small gardens. As the sets are high-priced it is desirable to make the most of them. We had five *Potatoes* to a pound of the abovenamed sort; they were cut into fifty-four sets, and these were potted separately in 60-sized pots in light soil, and as soon as the sprouts show above ground they will be planted out.

*Peas.*—Sowed the second crop, comprising early and late sorts. Alpha, William I., and Taber's Early Perfection are the best early sorts; for later, use Supreme and some of the earlier Marrows. A variety sent out last year named G. F. Wilson is earlier than Veitch's Perfection and of sterling merit. Champion of England, long a favourite variety, will scarcely hold its own amongst the claimants for popular favour.

*Onions and Parsnips.*—Ours were sown three weeks ago. Those who have not yet sown their main crops should do so at once. Advantage should be taken of the present favourable weather to get all the crops in and to push forward the work.

### FRUIT AND FORCING HOUSES.

*Pinerics.*—A very important matter in Pine culture is the plunging material, which ought not to be one that is subject to early decay, and it should also maintain an equable temperature. Spent tan fresh from the yards is very good where it can be obtained, but in country places Oak or Beech leaves are often used to good purpose. Neither of the above can be readily obtained with us, and, as previously stated, the refuse from a cocoa-mat and brush factory has been tried. So far it has answered admirably; the heat is about 90°, and if this is maintained as long as it is with tan, it will be a great boon to us, as besides its being more readily obtained, it is also cleaner to use and the plants can be plunged in it with greater facility. Where fruit had been cut of Smooth-leaved Cayenne and Charlotte Rothschild there were suckers to put in; these were potted in 6 and 7-inch pots. Suckers that were potted late in the autumn were also shifted into larger pots, 9-inch being mostly used. The plants were making fresh roots, but the old soil was not in good condition, and a large proportion of it had to be removed; they were not watered for at least ten days after repotting. In the fruiting houses, where fruit is swelling, the temperature should now be 70° at night, with a proportionate rise by day; plenty of atmospheric moisture is necessary now.

Placed a fresh batch of Keens' Seedling Strawberry in heat; as soon as the new leaves are formed the plants are supplied with weak liquid manure. We are drifting more into the practice of using the manure water at each watering, believing that it is better to apply the water very weak and often than it is to apply it double the strength and alternately with clear water. Place the plants close to the glass, water and syringe freely.

**Cucumbers and Melons.**—The plants put out a few weeks ago will be making good progress, but the nights are yet cold, so that it will be necessary to cover the glass with mats every night. The lights should be tilted a very little just as the sun begins to act on the glass in the morning, so that the leaves may dry before the temperature rises to its maximum. When cold north-easters are blowing some close netting hung over the apertures will temper the keenness of the air. Plants grown in houses and trained to trellises overhead are much more easily managed than those in frames; and where the bottom heat is applied from hot-water pipes, as it ought to be, there is no danger of the roots being burned by too great heat. The plants, however, become a prey more readily to the attacks of red spider, but this may at least be kept in check by syringing duly with tepid water, which at present is best done just before the ventilators are opened in the morning. When the days are longer syringing at night is also beneficial.

**Orchard House.**—The trees are now in blossom, and as there is plenty of sunshine with drying though cold winds, the fruit will probably set well. Close muggy weather is the worst for orchard-house trees when they are in flower. It is a tedious process to go over a large house with a small camel-hair pencil to set the flowers, but a few of the more shy-setting sorts may be so treated. Shaking the trees gently with the hand, or tapping them gently with a stout stick, will distribute the pollen sufficiently to cause the main collection to bear an abundant crop. Pear and Plum trees have been left out of doors until now. The small house in which they are placed to flower, and where they remain until the fruit is set, has no heating apparatus, and the later in the season the blossoms open the less chance is there of injury by frost.

#### GREENHOUSE AND CONSERVATORY.

Many species of hardwooded New Holland and other plants are attacked by red spider, and as this pest is now waking-up into active life, search should be made and means used for its destruction. Two old-fashioned plants, favourites of our household, and which would create a sensation at South Kensington if placed on the exhibition-table there, used to be famous resorts of the red spider—viz., *Clianthus puniceus*, the Glory Pea of New Zealand, and the *Cantua dependens*. Both are readily propagated by cuttings placed under bell-glasses, and they will well repay any care bestowed upon them. The best potting material is turfy loam and turfy peat in equal proportions, and made sufficiently porous by the addition of silver sand. The plants should be placed near the glass in the greenhouse, and be shifted into larger pots as they require it. Should they become pot-bound in an early stage of their growth, their leaves will become yellow and drop off, giving a naked appearance. The same effect is produced if red spider effects a lodgment on them. Both plants grow freely and may be shifted twice during the growing season; they are also of straggling growth, and should be trained to sticks placed round the inside of the rims of the pots. The *Clianthus* produces clusters of its large, crimson, pea-like flowers in May; the *Cantua* a profusion of its large, orange-red, tubular flowers in March and April, and these are so wax-like and distinct in character as at once to command attention.

Camellias have flowered late this year, and as the sun is now powerful in the afternoon they require shade. Should Azaleas be required to flower in May place the plants in a gentle heat, and syringe in the morning. The usual routine work has been re-arranging plants, placing fresh batches in the forcing houses, and removing those showing flowers.

#### FLOWER GARDEN.

It will not be necessary to reiterate the remarks about cleanliness. The lawn should be swept and rolled whenever necessary, and the edgings should be cut round with an edging iron. *Scilla amena*, *Erythronium dens-canis*, and such-like coming through the surface have been looked to, as in digging the borders too much soil was heaped over them. Primroses were also divided where more stock of choice varieties was required, and the plants examined for slugs. Potting and boxing bedding plants have been finished, except spring-struck plants, which will be attended to as soon as they are ready. Finished pruning the Roses; a number of plants were left until the present time, as, for one reason, a succession of flowers are obtained. Many of the recently introduced *Rosea* are of weakly growth; these must be well cut back. Others have a tendency to form a thicket of wood, which must be thinned-out in a regular manner. Strong-growing sorts should not be closely cut back.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Farm Seeds, Implements, &c.*

W. Clibran & Son, Oldfield Nursery, Altrincham.—*Catalogue of New and Choice Plants and Seeds.*

G. C. Short, Market Place, Stokeley.—*Descriptive Catalogue of Choice Seeds for Flower and Kitchen Garden, &c.*

#### TO CORRESPONDENTS.

\* \* We request that no one will write privately to any of the correspondents of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

REV. W. GILPIN (*Hibernicus*).—In a future number, as it may interest others of our readers, we will publish some biographical notes relative to this lover and describer of the "picturesque."

VILLAGE HORTICULTURAL SOCIETIES (*G. F. E.; A. Rogers*).—We published rules in No. 538 of this Journal. You can have it post free for four postage stamps.

GOLD WITHEY (*Southton*).—The name has no relation to the Willow. It is the name known in the New Forest, Hants, for the Sweet Gale, *Myrica Gale*. Although Withey, or Withe, is the Anglo-Saxon for the Willow, it is also the name in that language for any twisted rod—any plant's branch that is used as a band when twisted. Thus in the New Forest Hoar Withey (grey rod) is the name by which the White Beam, *Sorbus Aria*, is known, the term grey referring to the whiteness of the under side of its leaves.

OLD VINES OF BLACK HAMBURGH (*A Young Gardener*).—It is difficult to say how many bunches of fruit may be left on an old Vine that has hitherto only borne bunches averaging half a pound each, because if you have been renovating the Vine at the roots it ought not to be overcropped until fully re-established. If you have not done anything to the Vines we think you might leave thirty bunches or more on each, if the weight does not exceed what you say. We would, however, recommend you to see about lifting them in October if you can; and another year, or rather the season after that, larger bunches may be expected, and of course fewer of them will do.

GRAFTING AZALEAS AND CAMELLIAS (*Idem*).—We are not acquainted with any work bearing on this subject alone, but we may say the Camellia is usually grafted by inarching—that is, the stock is brought to the plant the scion is to be taken from, and a suitable portion of the young wood of the latter is grafted either by the tongue process or a plain splice, and being tied together remains until a junction is made. In such a way we have seen a great number of pots, each with a stock in it, raised and propped up around a large plant that was grafted to them, a little moss being tied round each junction. If the place could be kept close and rather damp growth would be facilitated. For Azaleas, take the scion off and graft in the usual way, provided a damp close frame is to be had; but where large quantities are worked and constant attention can be given, success is more certain than in the case of an amateur. One of the main secrets of success is an atmosphere which assists the scion after it is separated from the growing plant, until it becomes united by the flow of sap to the plant which is to support it.

ADIANTUM FARLEYENSE (*F. K.*).—It is a Fern which requires a warm house. The place you name may suit it during the summer months, but we are not at all sanguine of your success in winter.

LAWN GRASS WEAK AND PATCHY (*Rus in Urbe*).—We have no recollection of the answer you say we gave you months since, but probably the following treatment will improve your lawn—Apply a dressing of very rotten manure to the lawn now, or rich compost, and early in April rake it well with an iron rake, and sow over it 6 lbs. *Festuca duriuscula*, 8 lbs. *Cynosurus cristatus*, and 8 lbs. *Trifolium minus*, with 4 lbs. *Poa nemoralis sempervirens* in mixture for one acre. Rake lightly after sowing, and roll well, not mowing until May, and then keep well mown and rolled. A dressing of guano in moist weather in May would much improve the growth of the grass.

MELONS IN A GREENHOUSE (*R. F. R.*).—It is possible to cultivate Melons in a warm greenhouse in the hottest part of the summer, but you must not expect to grow anything else in it, and the permanent plants will be very much injured. We have seen a good crop of Melons in a newly plantedinery where the Vines had not done well, and were destroyed in June and Melons planted. So much, however, depends on the season and other matters that it is difficult to give a decided opinion; but we may say that growing Melons on the roof of a low pit is about the best mode that can be adopted, as it allows of the under side of the foliage being syringed to keep down the red spider, and the fruit can easily be supported by small pieces of netting or some other contrivance. The atmospheric heat after the end of May is usually sufficient for the plant when grown in a closely glazed structure that can be shut up rather early in the afternoon; but in general a greenhouse may be more agreeably used in growing Balsams, Fuchsias, Cockscombs, and other ornamental plants during the summer, and we would therefore not advise Melons unless in some special case, as where there was nowhere else to plant them and they were much wanted.

GLASS FOR CONSERVATORY ROOF (*Sussex*).—The roof being a span, with the ends running S.E. and N.E., will have one side facing the south-west; for this we would use ground glass, so as to render shading unnecessary, but you must employ good glass, otherwise after frost there will be broken squares. We use polished plate ground on the inner side, the smooth face being placed outside. It is one-fourth inch thick. Frosted glass and ground-rough plate are very liable to breakage, and, though cheaper to begin with, are dearer in the end than polished ground plate. There is no objection to Ferns occupying the centre of the greenhouse and flowering plants the side shelves. We suppose you have considered whether you will have enough flowers, especially Camellias, of which large plants cannot be accommodated on the side shelves.

GREENHOUSE HEATING (*G. S. R.*).—It could not be heated by gas, 2-inch pipes being employed, as that would give a large quantity of water to be heated, but it can be warmed satisfactorily and economically by 1-inch pipes. You will need six rows of pipes along the front, and the boiler ought to be within the house. If you employ coal or coke as fuel to heat the boiler, the latter ought at least to be fed from the outside. You will need two 3-inch pipes, or three 2-inch pipes, to give the required temperature in frosty weather. Your house ought to be heated by gas at a cost of about 4s. per week. The pipes should be taken along one or both ends and the front.

CALCEOLARIA CULTURE (*Biceps*).—Early next month prepare a bed by taking out the soil 6 inches deep and placing it on both sides of the excavation as in forming a trench for Celery; point into the bottom with a fork a 3-inch

thickness of well-decayed leaf mould, mixing it well with the soil, and in this plant the Calceolarias, after carefully taking up, in rows 9 inches by 6 inches apart. Water after planting, shading from bright sun by mats placed on sticks arched over the bed, which will also be useful for supporting mats on frosty nights. When the plants have become established after planting stop them so as to induce a bushy growth, and keep well supplied with water. From the bed they are to be moved with good balls to where they are wanted to flower.

**BEDDING LOBELIAS (F. J.).**—Old plants are not so good as those which are young, as the former will flower earlier than the latter and do not produce a succession of bloom until autumn. Seedling plants are freer in growth and keep up a better succession of flowers than those from cuttings, but the seed must be true, which is not always the case.

**GREENHOUSE PLANS (W. G. C.).**—We prefer No. 1 with the ends facing north and south, and the sides east and west, the ridge-and-furrow roof running lengthwise of the house. No. 2 is not good, but would answer.

**VINERY HEATING (Ben.).**—As your house is in the shade more fire heat will be needed than if it were exposed to the sun. We should commence fires about the end of the present month or beginning of April. Keep the temperature at 55° at night for the first fortnight, commencing with 50° and increasing gradually to 55°, and during the next fortnight rise to 60°. Keep at that until the Vines are in flower, then give a rise of 5° at night, and after flowering let the night temperature be 60°. On all the temperatures named a rise of 5° may be given on dull days without sun, 10° to 15° with cloud but a little sun, and 15° to 20° or more with bright sun and abundance of air. It is not desirable to apply fire heat to Vines early in the season when the roots are in an outside border.

**ORNAMENTAL BEET—BLUE LOBELIAS (J. F. C.).**—Beta vulgaris kormesina is not superior as an ornamental-foliated plant to Dell's Crimson Beet, which, with many aliases, is the finest for garden decoration. The best Lobelias of the speciosa class are Brilliant, Blue Boy, Compacta or Crystal Palace Blue, which are of dwarf dense habit; those of rather straggler growth are Lobelia Ericos speciosa grandiflora, and Tremant Blue. Of the pumila class the best are pumila grandiflora, Sunset, red lilac; and Purple Prince, purple tinged with brown. Where not otherwise stated the colour is blue. Others are Cobalt Blue, Heather Bell, pink, White Perfection, Pearl, Snow, and Snowdrift. Finely sifted ashes, unless washed, are not suitable for lightening soil for potting. Sand is far preferable, though washed ashes answer well.

**CAMELIAS DIRTY (E. Robinson).**—The leaves are covered with a black fungus from the plants being infested with scale, and not in consequence of the soot and dust of the chimney. Wash the leaves with a solution of soft soap, 4 ounces to the gallon, as hot as the hand can bear it, but not more than 140°. The stems, as well as both sides of the leaves, should be washed clean with a sponge, taking care not to allow the soapy water to run down to the roots.

**COCOA NUTS SPROUTED (F. Bowles).**—As the trees which produce them attain a height of 50 feet and require a stove heat, we advise you not to attempt their cultivation.

**CONSTRUCTING A VINERY (Market Gardener).**—We consider the construction of your vinery will answer, and we have no suggestions to offer, only we should have Foster's White Seedling in place of Royal Muscadine, and Black Hamburgh as you propose. Buckland Sweetwater is also a fine, large, white Grape for an unheated house. The Vines we should have planted inside, the front wall of the vinery being arched so as to allow of the roots passing outwards. The border under the circumstances stated will not require draining, but we should add to every square yard of border half a peck of half-inch bones, and mix them with the soil at least 18 inches deep. We do not think you will succeed with Peaches against the back or end, as in a few years the roof will be so covered by the Vines as to render the fruiting of the Peach trees very uncertain.

**PRODUCE OF VINES (R. Forrest).**—It is difficult to form a conclusive opinion, as so much is dependant on the state of the Vines and the treatment. One pound weight of Grapes for every foot of rafter occupied by the Vines is a very good and safe calculation, and your twenty Vines ought to give you 20 lbs. weight of Grapes each, or 400 lbs. of Grapes in all. The Vines not having been pruned we should still do so, keeping the house cool, and applying Thomson's styptic to all the cuts. The patent knotting used by painters will answer nearly as well; each will prevent the Vines bleeding.

**TURFING A VINE BORDER (Twenty-two years Subscriber).**—You are quite right in not having the border turfed, but you may grass the herbaceous border, and have an evergreen hedge at the back so as to shut off the Vine border. The hedge should not be so high as to shade the Vine border much, certainly not more than 4 feet. Box 2½ feet high would answer very well, and would not hold many leaves, but any caught by it would have to be cleared away as they accumulated. A rustic fence would not answer so well as an evergreen hedge; but could you not have a few flowering plants in pots plunged in the border in summer so as to make it gay, and so take away its bareness?

**VINERY MANAGEMENT (J. D.).**—Too much moisture in the atmosphere, combined with a low temperature, is the cause of the young leaves becoming spotted and damping-off. As you have raised the night temperature of the house to 60°, probably the evil you complain of no longer exists. If the Vines are not doing well yet, raise the night temperature to 65°, with a proportionate rise by day. See that the roots are well supplied with water.

**PLANTING FIG TREE OUT OF DOORS (A. B. G.).**—Do so at once. Brown Turkey will answer your purpose.

**PATENT FELT (Julius).**—We cannot recommend dealers.

**VIOLET CRESS (A. C.).**—It is Ionopsisidium acaulis, and has been called by different botanists Cochlearia acaulis and C. pusilla. It is a very pretty annual, introduced from Portugal in 1845. There is a portrait of it in the "Botanical Register" of 1846. The "Journal of the Royal Horticultural Society" thus spoke of it:—"It is found wild, according to Brotero, on the basaltic hills near Lisbon, and occasionally on the limestone formation of Estremadura. Desfontaines also met with it in Barbary. A beautiful rock plant for shady situations; its flowers are of a clear lilac, and the foliage is of a delicate green colour. It propagates itself by seeds, and by runners which throw out roots abundantly into the damp soil. It is a hardy little annual, growing in any rich garden soil, and blooming from April to October. It requires rather a moist (shady) situation. Its small flowers (which come out white and turn to a pale lilac) appear in profusion from April to October. It makes a neat edging to borders in shaded places, and is a capital rockwork plant."

**ROSE LEAVES MILDEWEED (S. A. E.).**—The leaf has been affected with mildew, most probably owing to defective root action. The young shoots in unheated houses are apt to push without the roots being active enough to supply sap. More air, especially on sunny days, and a little liquid manure to the roots, will most probably do good.

**DAPHNE ODORA STRAGGLING (F. A. L.).**—We should cut-in the plant to bring it into form, keeping rather dry for a fortnight or three weeks previously, and when it had broken and made shoots an inch or so long we would replot, removing most of the old soil, using a size of pot that would hold the roots without cramping, and placing a little fresh soil all round. Good drainage, and a compost of equal parts peat and loam (both sandy and fibrous), with a sixth of silver sand will grow it well. Keep rather moist and shaded, giving an increase of temperature for a short time, then admit air and light, watering so as to keep the soil moist, but avoid overwatering. The parts removed may be put in as cuttings, which strike freely in gentle heat.

**HEATING HOUSES (R. O. O.).**—The mode of heating, as shown by your plan, would be improved if you were to take the pipes along the garden house until the early vinery was reached, and then carry the pipes through the wall into it, across its end, and along the front. Two rows of pipes with their returns will be sufficient. For the late vinery we should take the pipes along the garden house until the house was reached, then into the house, and along the end and front. A flow-and-return pipe will be sufficient, and these we should have on the level. Taken through the early vinery, that house would be unnecessarily and injuriously heated when the Vines were at rest. You ought to have two more pipes for top heat in the forcing house—i.e., two flows with their returns, and the same number of pipes for bottom heat—two under each bed—viz., a flow and return for each. From the fernery frost can be excluded by one pipe all round, likewise from the pit, if not over 6 feet wide, by one pipe at the back as shown in your plan, but you will need to have a valve on the pipe at the side of the fernery next the pits so as to cause the water to circulate directly through the pit pipes, which will cut off the pipe along one side of the fernery; or the valve might be partially shut so that whilst the pit pipe would be heated fully there would be also heat in the pipe alongside of the fernery. We should have all the pipes 3-inch, and have them provided with valves, so that you could work the whole separately or together. The pipes should be taken under the paths in a flue formed of bricks and covered with slugs. We do not advise Peach trees for the back walls of the early and late vinery. They would do for a year or two, and then, owing to the shade of the Vines, they would not bear.

**INSECTS ON GERANIUMS (Miss Allen).**—You give no description nor specimen of the insect, therefore we can only advise you to fumigate the house with tobacco. Shut-up the house on a calm evening, and fill it with tobacco smoke so that the plants cannot be seen from the outside. If, as we think, the insects are aphides, the tobacco smoke will destroy them. We do not wonder at the plants being injured by the flowers of sulphur if it was burned, but dusted on the leaves it will not destroy them. It is of no use against insects in that state, but an excellent application for mildew.

**NAMES OF FRUITS (H. L.).**—Wyken Pippin. (Streber).—Your Apple is very much like Pomme Royale, but we are not sure about it.

**NAMES OF PLANTS (F. E. T.).**—Named last week, page 208. (W. J. H.).—1, Sparmannia africana. We cannot name Rhododendrons from single flowers. 4 is in the way of R. retusum. (G. S. B.).—Sparmannia africana, native of the Cape. (C. W.).—Eriostemon myoporoides, D. C. (J. Englefield).—1, Ruscus (Dane's) racemosus; 2, Material insufficient. (W. G.).—Omphalodes verna. (T. N.).—1, Deodrobium aggregatum, Rozb. (Bot. Meg., 3643); 3, Apparently a very handsome form of D. nobile, or a nearly allied species; 2, We cannot name without blossom. (T. M. A.).—1, Billbergia Morehiana; 2, Strelitzia Reginae; 3, Selaginella flabellata; 4, S. canlescens; 5, S. cuspidata; 6, Peperomia Saundersii. (A. Rawson).—Loniceria Standishii, E. M., t. 5709. (G. Diss).—1, Adiantum cuneatum; 2, Pteris cretica; 3, Nephrodium molle; 4, Asplenium marinum.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### OBJECTING TO JUDGES.

I HAVE read your articles. Are they provoked by a rule of the National Ornithological Association to combine to resist or protest against awards? What judge would subject himself to such treatment? Let the judges be chosen, publish their names, let their decision be final, mistakes or no mistakes, and let those who do not like the names stay at home.

To be a poultry judge requires practice. This seems to be entirely overlooked. Nothing but practice can give confidence to all the theoretical knowledge in the world, and a non-practised hand will be longer at it than an old hand. If there is a fear of the old hands giving up soon, why not associate younger hands with them without a fee? Many, I dare say, would pay their own costs to serve the cause in this unenviable office.

To render my meaning as to practice more clear, I know of no better illustration than the following: When the volunteer and militia movement began in Canada a military school was established, and drill-books issued and studied with a will. At examinations *visà voce* and in writing, questions were answered beyond correctly if possible. The same people had a company of men put before them and failed in all their attempts to pass for some time. They were hurried—in fact, until they had practice, were entirely put out. A young poultry judge is in the same lat. He knows the written standards by heart—has kept, perhaps, nearly all breeds, some a shorter time, some a longer—but thinks, "I have only so much time; if I make a mistake (which the veterans often do), what a row I shall get into from our Journal, &c.!" He is in a complete fry until by practice his nerve becomes equal to it; then he can apply his knowledge in half the time, and confidently make his award.

But if judges are to be judged by the new Society they will

soon be snuffed out. Every disappointed exhibitor will kick up a row, and is bound to be supported.—F. C. HASSARD.

### BLACK BANTAMS.

I AM sure all amateurs will be obliged to Mr. W. D. Arundel for his effort to enlighten them on the above breed. It is quite true that most of the books on poultry do not give sufficient practical information. I know of none, however, which does not contain a fair description of the points of the various breeds, and Mr. Arundel's paragraph does nothing more; moreover, it contains ideas which, if followed by amateurs or anyone else, will lead to certain disappointment, and be much more likely to send them astray than assist them to breed and show Black Bantams to perfection. After telling us that "the birds of the variety should be black, and that the comb should be double, and covered with small points on the top," &c., Mr. Arundel proceeds to say that "the tail of the cock should be carried upright, and the head carried well back towards the tail;" and again, a little further on, "The breast is round and prominent, and is carried forward by the cock. The neck of the cock is very taper, and is gracefully curved well back, so as to bring the back of the head into close proximity with his tail." This means to say that a Black Bantam should be in shape and style similar to a Sebright or a Fantail Pigeon, and is entirely an erroneous idea. The very best authorities say that a Black Bantam should be a miniature Black Hamburg—smart, compact, and the tail carried away, rather drooping than otherwise; and this has been substantiated, more especially in recent shows, by Hewitt, Teebay, Bailly, Dixon, Hodson, and other well-known judges. I fear any amateur, taking Mr. Arundel's standard for a guide, would find himself in the position mentioned by that gentleman at the end of the first paragraph in the article I have been quoting from, appearing in last week's Journal.—E. CAMBRIDGE.

### NORTHAMPTON POULTRY SHOW.

The spacious Corn Exchange at Northampton contained last week one of the best collections of poultry ever brought together in the district. The Show was exceedingly well arranged, and with the exception that Aylesbury and Ronen Ducks should always have separate classes, and might be shown in pairs, there was very little to complain of in the prize schedule. The exhibits of every kind considerably exceeded 1100 pens, which leads to a remark worthy of attention. Of poultry alone about sixty pens were empty, and it was repeatedly asserted by several exhibitors—and we have not any reason to doubt the correctness of the statement—in several instances only a portion of the poultry was delivered in time for adjudication, out of a number of pens forwarded by the several owners into the hands of the railway companies at one and the same time; in fact, some half-dozen pens were delivered at the Exchange so late as 6.25 p.m. on the day of the judging, and it is quite possible others may have arrived (unknown to ourselves), at even a later hour, for consignments were coming-in at intervals during the whole of Tuesday, the day for judging. This is certainly not as it should be, and railway officials are to be much blamed for so unjustifiable a detention, as from the fact that the judging did not commence until considerably past midday on the Tuesday, poultry if consigned by an early train from any part of the kingdom on the Monday, should have reached its destination long before the time fixed for the adjudications.

It has of late been a somewhat general remark that *Dorkings* prove very small classes, and it again held good at Northampton, for with the exception of the prize birds, these classes were decidedly indifferent. The second-prize hen was an extraordinarily good Silver-Grey, but not a single bird (cock or hen), of White Dorkings was entered. As a kind of compensation, the *Cochin* classes proved one of the grandest collections seen for many years past. In both cocks and hens of the *Buffs* these classes were an exhibition of themselves—so good, indeed, that the highly-commended pens would have proved prize-winners at shows generally. The cup *Buff* hen is one that would, once seen, scarcely be forgotten, being exhibited in a most trying competition, but possessing character and colour as nearly faultless as it is possible for the most fastidious amateur to conceive. The Partridge *Cochins* were also most praiseworthy, but it was a matter of regret to find a decidedly rumpy hen entered in this class. It is unjust to other exhibitors to send them when thus affected. White *Cochins* were few but very creditable. Although so late in the season, the collection of Dark *Brahmas* was unusually good, the clear plumage of the cocks and the lovely pencilling throughout of the hens being subjects of general congratulation. The Light *Brahmas*, though not equal to the Dark, were praiseworthy; but it was an evident cruelty to overshadow the inmates of one or two pens in the way they had been. It may bring increasing notoriety to the owner, but it should not be forgotten it is a lingering death to the bird. The *French* classes were well filled throughout, and it was

pleasing to find La Flèche fowls repeatedly among the winners. *Spanish* fowls, of which in both their own classes and the Selling classes there was a superabundance, were of extraordinary excellence, and it may be years before so many first-class specimens at such astonishingly low prices again meet the wishes of intending purchasers. The quality of some of even those *Spanish* fowls in the Selling classes would secure favourable returns at most poultry shows. Black Red *Game* fowls proved not nearly equal in quality to Brown Reds, which were, on the contrary, of very superior quality. The cup for *Game* was secured by a most excellent Brown Red cock, shown in a condition so good as to attract the notice of all who saw it. *Hamburgs* were generally good, the cup being given to an extraordinarily well-mooned Golden-spangled cock of exceedingly pure ground colour.

Although three dozen entries competed in the *Game Bantam* cock class, it was a remarkable feature that scarcely any of the best specimens, which were plentiful, was in anything approaching show condition, the listless manner in which they stood proving how sadly they had been overtaxed by continuous exhibition. Some of the best of Black Bantams were shown, also a few Silver-laced worthy of especial mention. A jet black Japanese Bantam cock, well shown and recently imported, deserves especial mention, being a most unique specimen. Perhaps one of the most notable features of the Show was the entry of Silver and Golden-spangled *Polands*, than which a richer collection has rarely been offered to public view.

The immense entries in the Selling classes of varieties of the highest character, the whole of which appeared to be in robust health, and, consequently, excellent breeding condition, caused the sales to be very numerous, as well as satisfactory to the purchasers. Every attention was paid by the indefatigable Secretary and Committee to the wants of the poultry under their charge, and their courteous attention to the incessant inquiries of those desirous of possessing wished-for pens was unwearied. The weather also proving favourable, the Show was a most successful one.

### RABBITS.

The Rabbits were well arranged and managed in Turner's excellent pens, sweet hay, oats, and carrots being supplied in profusion; and though the entries were not nearly so numerous as those of last year, yet 115 good specimens are not a bad display. Taken in all, this was one of the best collections seen of late. Mr. Rayson was advertised as Judge, but in his absence Mr. Hutton officiated. There were four cups offered for competition, as also three prizes of 20s., 10s., and 5s. in each class. Two classes with one cup were set apart for Lops, but in point of numbers they were comparatively a failure, there being only thirteen entries in all, but the quality was quite as high as is possible. In bucks a grand Sooty Fawn was first, the length being 22½ by 4½ in width; the second being a Fawn 21½ by 4½; and third a Blue, 21½ by 4½; the only other Rabbit in the class receiving a very high commendation. Does were a grand Tortoiseshell, 22 by 4½, large, of nice quality of ear and head, with a large well-formed dewlap; the second being also a Tortoiseshell, much better in colour, something shorter in ear, but comparatively defective in dewlap; and the third Black-and-white, but a little too gay in marking. The point cup was won by Mr. Banks. Angoras were very good; the first a mass of fleecy wool and well shown; the second and third being good in that respect, but not so large. No. 940, an immense doe, was not up to the mark in fur. Himalayans were a very large entry and some of them well marked, while many were too mousey on the feet to succeed in the show-pen, though the winners may be considered good average specimens. Dutch were not so numerous, but mostly mentioned. The first prize went to an almost perfect Blue-and-white doe, very small and smart, winning the cup against the Himalayans. Second came a Tortoiseshell buck, quite as perfect in marking, but large; and third a neat small Fawn-and-white. Silver-Greys were an extraordinary class, whether as regards entries or quality; and no grander sight have we ever seen of this variety of Rabbit, scarcely one bad one being shown, and two extra prizes were allowed by the Society. The winning Silver-Grey Rabbits were most beautifully silvered throughout, while many most perfect in body but a little darker on the head were highly commended. The fourth cup was awarded here.

Many cheap Rabbits were shown in the Selling class, and the prizes were awarded to a Tortoiseshell first, a Lop-eared buck; second, an Angora; third, also a Lop. Three good Rabbits won in the Local class, the first-prize winner being a good Sooty Fawn Lop, 21½ by 4½, but a little wanting in condition; second an Angora, and third a Silver-Grey.

(From a Correspondent.)

Again Northampton has succeeded in forming a splendid exhibition of Rabbits; not so large as the last certainly, but, notwithstanding, nearly equal to it for quality.

*Lop-ears*, Self-colours (only five entries).—The chief and indeed sole feature of this class was the first-prize winner—a

grand Sooty Fawn buck, so well known in the show pen. The other winners were very good. Lop-ears, broken colours (eight entries).—The two superb Tortoiseshell does, as first and second, were assuredly rightly placed; and the third, a perfect Black-and-white, was well worthy of that honour.

*Angoras* (eleven entries) were an excellent class. The cup-winner was faultless; scarcely less so, however, was the second-prizetaker. Mr. Garner's Crystal Palace cup Rabbit had here to content itself with third. The fact that the whole class with only one exception was awarded honours shows that the Angoras were all that could be desired.

*Himalayans* (twenty-two entries).—The contest in this class was very severe, owing to the number of meritorious Rabbits. The first-prize winner was a model of excellence, while the other successful candidates were quite worthy of their respective positions.

*Dutch* (ten entries) were not so numerous as they might have been, but, as in several of the other classes, quality made up for quantity. The exquisite Blue-and-white doe which obtained the cup was among the best Dutch ever exhibited. The Tortoiseshell which gained the second prize was a fine animal, but the Yellow-and-white or Grey-and-white of Mr. Boyle should have been in its place.

*Silver-Greys* (twenty-six entries).—This, the largest and decidedly the best class of all, contained some Rabbits that have never been surpassed. The cup-receiver was nearly perfect in all points; the second and extra second beautifully shaded; and the third and extra third very fine, particularly the latter. The other badges of honour, which were very liberally distributed, went to some very good specimens. This class was one of the largest and finest ever seen.

The *Any variety* class (nine entries) was tolerably filled. The first, a valuable Belgian Hare doe, was unapproached by any of the class. The second and third were also Belgian Hares; very good ones too. Two fine Belgian Hares were highly commended; and a good Patagonian, Siberian, and Silver-Grey commended.

The *Selling* class (seventeen entries) included nearly every popular variety, most of which were very praiseworthy. The first-prizetaker was a very large Tortoiseshell Lop buck, worth double the price required for him. The next in position was a beautiful Angora, which, had it been shown in the Angora class, would doubtless have been noticed. The third was a very good Grey Lop buck. Nearly all the other pens had honourable mentions, which they really deserved. Amongst these, two Black-and-white Lops (1028 and 1031), a Himalayan (1021), a Yellow-and-white Lop (1029), two Angoras (1024 and 1026), and a Blue-and-white Lop (1030) are worthy of special notice.

The *Local* class (eight entries) was poor in comparison to last year's. An exceedingly good Sooty Fawn Lop stood first, a nice Angora second, and a Silver-Grey third. Two good Lops followed in the rear. This class has generally been a principal feature of the Show.

The arrangements were very good. All the Rabbits were well cared for, and liberally fed. Before concluding, I wish to call attention to the scarcity of entries this year. The last Show mustered 162 pens, against 114 this year.

**DORKINGS** (Dark, Grey, or White).—*Cock*.—1, H. Lingwood, Barking, Needham Market. 2, J. Longland, Grendon, Northampton. 3, J. Watts, King's Heath, Birmingham. 4, H. Mills, Dorking. *Hen*.—1, Henry Lingwood. 2, D. Gibson, Springfield, Barchead. 3, J. Longland, H. Mills.

**COCHIN-CHINA** (Cinnamon or Buff).—*Cock*.—1 and 2, W. A. Taylor, Manchester. 3, W. A. Barnell, hc, T. Stretch, Ormskirk; Henry Lingwood; Major Biggild, Norwich; Mrs. E. Sapp, Hinton Hall, W. A. Taylor. 2 and 3, Horace Lingwood, hc, W. A. Taylor. *Hen*.—Cap and 2, W. A. Taylor. 3, H. Tomlinson, Newark-on-Trent, hc, W. Mansfield, Cambridge; Mrs. Beasley, H. Turner.

**COCHIN-CHINA** (Partridge or Black).—*Cock*.—1, Mrs. J. Shrimpton, Leighton Buzzard. 2, T. Stretch. 3, W. A. Taylor, hc, W. A. Taylor; T. L. Nash; J. K. Milner, Cherbury, Blackrock, Co. Dublin. c, T. Aspenden. *Hen*.—1, W. A. Taylor. 2, T. Aspenden. 3, T. Stretch, hc, F. Wilton; W. A. Taylor; Mrs. J. Shrimpton, c, Hon. Mrs. Vernon; Capt. F. G. Coleridge.

**COCHIN-CHINA** (White).—*Cock*.—1, R. S. S. Woodgate, Pembury, Tunbridge Wells. 2 and 3, W. A. Barnell, hc, J. T. Weeks. *Hen*.—1, W. A. Taylor. 2, R. S. S. Woodgate. 3 and hc, W. A. Barnell.

**BAHMA POOTRA** (Light).—*Cock*.—1, M. Leno, Markyate Street. 2, T. A. Dean, Mardeu, Hereford. 3, J. H. Butler, Erdington, hc, J. Bloodworth, Cheltenham. *Hen*.—1, R. P. Percival, Northenden, Manchester. 2, Horace Lingwood, hc, J. Bloodworth, hc, R. Bird, Fulham; J. H. Butler.

**BAHMA POOTRA** (Dark).—*Cock*.—1 and 2, W. A. Taylor. 2 and 3, Horace Lingwood, hc, W. A. Taylor; R. P. Percival, hc, 1 and 2, Horace Lingwood. 3, W. Mansfield, hc, E. Latour, Hexton, Amptill; R. P. Percival; J. S. Clarke, Oundle; J. Harvey, jun., Thackington; J. Watts, c, H. Feast; M. Leno.

**FRENCH**.—*Cock*.—1, D. Gibson. 2, Rev. N. J. Nidley, Newbury. 3, W. Harris, Penyfar, Glamorganshire. *Hen*.—Mrs. J. Cross, Appleby Vicarage, Briggs, hc, R. H. Ashton. 1, J. J. Malden, Biggleswade. 2, H. Feast. 3, E. Latour, hc, R. H. Ashton.

**SPANISH**.—*Cock*.—Cap, J. Palmer, Acton, London. 2, J. Leeming, Broughton, Preston. 3, H. Brown, Putney Heath, hc, Mrs. Tockin; Nicholls Bros, Camberwell, c, F. James, Peckham Rye. *Hen*.—1, J. Leeming. 2, T. Moore, Cardiff. 3, E. Brown, Sheffield, hc, F. James; Mrs. Tonkin, Bristol; J. T. Parker, Northampton (2); Mrs. Allepp; H. Feast.

**BLACK** (Black-brasted Red).—*Cock*.—1, J. Mason, Worcester. 2, S. Matthews, Stowmarket. 3, Cox, Moulton. *Hen*.—1, S. Matthews. 2, E. Winwood, Worcester.

**GAME** (Any other colour).—*Cock*.—Cap, S. Matthews. 2, J. W. Thornton, Bradford. 3, J. Leeming, hc, T. Mason, Lancaster; D. Gibson; F. Sales, Crowle; J. Chester, Nantwich. c, E. Winwood. *Hen*.—1, J. Richardson, Loughborough, 2, J. Leeming. 3, S. Matthews, hc, B. Cox (2).

**HAMBURGERS** (Golden or Silver-spangled).—*Cock*.—Cap and 3, T. Aspenden, Church, Acreington. 2, H. Feast, hc, T. Boulton; T. Love, Kingsthorpe; C. Parsons, Wolverhampton; P. Hanson, Stoughton; J. Ward, Ashby-de-la-Zouch. *Hen*.—1, P. Hanson. 2, H. Turner, Sheffield. 3, J. Ward, hc, J. McAndrew, jun., Carnostie; J. Clarke; T. Aspenden.

**HAMBURGERS** (Golden or Silver-pencilled).—*Cock*.—1, W. Speakman, Duddington Park, Nantwich. 2, R. Hudson, Selkirk. 3, H. Feast. *Hen*.—1, T. Aspenden. 2, R. Hudson. 3, A. Smith, Lincoln. hc, H. Feast.

**ANY OTHER VARIETY**.—*Cock*.—1, W. A. Taylor (Silver Polish). 2, T. Boulton, Hamford, Stoke (Black Hamburg). 3, J. S. Rooth, Chesterfield (Malay). hc, A. Silvester, Sheffield (Gold Poland); Miss Jacob, Abbot Langley (White Leghorn) (2); G. W. Boothby, Louth (Gold Poland); Capt. F. G. Coleridge, Wargrave (Poland); E. C. Howard; J. Robinson, Garstang, c, Rev. N. J. Nidley (Malays); J. J. Watkins. *Hen*.—1 and 2, W. A. Taylor (Silver Polish). 3, J. Boulton, Stoke (Black Hamburg). hc, H. Bull, Dring, Lough (Black Hamburg); Miss Jacob (White Leghorn); C. Bloodworth (Silver Poland); H. Feast; J. Robinson, c, Mrs. B. M. Arnold (Light Malay); G. W. Boothby (Gold Poland).

**SELLING CLASS** (Any variety except Bantams and Ducks).—*Cock*.—1, J. W. Thornton (Brown Red). 2, T. Love (Golden-spangled). 3, P. Collins, Daventry (White Cochins). hc, J. S. Clark (Dark Brahma); Major Bignold (White Cochins). *Hen*.—1, W. A. Taylor (Dark Brahma); J. S. Rooth (Buff Cochins). hc, H. Bull, Dring, Lough (Brown Red). c, T. L. Nash, Sprogbton (Buff Cochins); J. S. Rooth (Malay).

**SELLING CLASS** (Any variety except Bantams and Ducks).—*Hen*.—Cap, J. T. Parker (Spanish). 2, J. Watts. 3, J. Longland, Grendon (Dorking), hc, Mrs. Peet, Sharnbrook (Light Brahma); W. Stevens, Northampton (Dark Brahma and White Cochins); Miss E. Browne, Chardighy Green (Silver-spangled Hamburg); R. Dickson (Dorking); T. L. Nash; J. Atkins, Bedford (Gold-spangled Hamburg); Nicholls Bros. (Spanish); W. R. Bull, Newport Pagnell; J. Watts; M. Leno (Silver-pencilled Hamburg). c, H. Brown (Spanish); T. Whittaker, Melton Mowbray (Game Pie); Mrs. E. Allsopp.

**SELLING CLASS** (Any variety except Bantams and Ducks).—*Cock and Hen*.—1, E. C. Howard, Peckham (Spanish). 2, J. Watts. 3, T. A. Dean (Buff Cochins). hc, Mrs. Peet (Light Brahma); W. Stevens (White Cochins); Miss E. Browne (Silver-spangled Hamburg); W. R. Bull, Dring, Lough (Brown Red). c, T. L. Nash, Sprogbton (Dorking); Mansell, Longton (Spanish); R. W. Richardson, Beverley (Dorking); Nicholls Bros. (Spanish); J. T. Parker (Spanish); J. S. Rooth (Malay); Miss M. J. Nelson (Game); H. Yardley, Birmingham. c, T. Kingsley, Tring (Geese); P. Passmore, Northampton (White Cochins).

**LOCAL CLASS** (Any variety).—Cap, W. Nottage, Northampton (Spanish). 2, W. Stevens (Dark Brahma). 3, P. Passmore (White Cochins). hc, W. Nottage (Spanish); T. Howard (Brown Red Game); J. T. Parker (Spanish); R. E. Clayton (Dorking); J. Mansell, Longton (Spanish); J. T. Parker (Spanish); J. S. Rooth (Malay); Miss M. J. Nelson (Game); H. Yardley, Birmingham. c, T. Kingsley, Tring (Geese); P. Passmore, Northampton (White Cochins).

**DUCKS** (Any other variety).—1 and 3, M. Leno. 2, H. Yardley, hc, A. Umpleby, Boroughbridge (Carolina).

**SELLING CLASS** (Ducks).—1, T. Kingsley (Aylesbury). 2, Mrs. J. Cross (Mallards). 3, J. Gibson (Black-breasted Red). *Cock*.—Cap, G. Anderton, Acreington. 2 and 3, Capt. T. Wetherall, Loddington, Kettering. Extra 2, W. F. Addie, Preston, hc, T. Dowell, Sunderland; W. Adams, Ipswich; Miss M. J. Nelson, Cockshaw, Hexham. *Hen*.—1, G. Lucas, Hitchin. 2, D. Gibson. 3, Capt. T. Wetherall, hc, Capt. T. Wetherall (2); N. Hill, Ealing.

**GAME BANTAMS** (Any other colour).—*Cock*.—1, J. Eaton, Grantham. 2, T. Barnett, Walsall. 3, Hall & Ashmore, Birmingham, Chesterfield. hc, M. J. Nelson. *Hen*.—1, Miss R. C. Frew. 2, W. Marryat, Wexham. 3, E. Southwood, Fakenham. hc, T. Barnett; W. Adams, St. Clement's, Ipswich.

**BANTAMS** (Any variety not Game).—*Cock*.—1 and 2, R. H. Ashton. 3, M. Leno. hc, N. Hill; C. Reed, Cambridge; H. Draycott, Leicester; Miss B. P. Frew, Kirkcaldy. c, J. Watts; M. Leno. *Hen*.—1, M. Leno. 2, Miss J. M. Frew. 3, J. W. Corner, Whitby, hc, R. S. S. Woodgate, Pembury, Tunbridge Wells; W. A. Taylor; J. Bloodworth; C. Reed; H. Draycott; M. Leno. c, J. L. Bingham, H. Yardley.

**SELLING CLASS** (Bantams).—1, T. W. Anns, Clapham. 2, T. Holton. 3, J. Watts, hc, M. Leno (2).

## PIGEONS.

**POUTERS** (White).—*Cock*.—1, H. Pratt, Knowle. 2, F. W. Zarhorst, Bellville, Dublin. 3, R. Ashton, hc, Mrs. Ladd, Calne. *Hen*.—1, Ladd. 2, R. Ashton. 3, L. Watkins, Northampton. hc, R. V. Richardson. c, W. Nottage.

**POUTERS** (Black or Blue).—*Cock*.—Cap and 3, H. Pratt, hc, H. A. Massey, Spalding. c, J. Haireine. *Hen*.—1 and 2, H. Pratt. 3, N. Hill, hc, H. Yardley, c, L. Watkin.

**POUTERS** (Any other colour).—*Cock*.—1, N. Hill. 2, A. Heath, Calne. 3, W. Nottage. *Hen*.—Cap, N. Hill. 2, H. Pratt. 3, Miss C. Dows, Boston.

**CARRIERS**.—*Cock*.—Cap and 3, W. Nottage. 2, J. E. Spence, Broughty Ferry, hc, E. C. Stretch, Ormskirk; H. Yardley; G. Beckwith, Sunderland. *Hen*.—1, H. Yardley. 2, T. Chambers, jun., Northampton. 3, R. W. M. Clarke, c, G. B. Young. *Cock and Hen*.—1, H. Yardley. 2, C. H. Clarke.

**BARDS**.—*Cock or Hen*.—1 and 2, H. Yardley. 3, G. W. Dutton, Chester.

**TIMELEYS** (Short-faced).—*Cock or Hen*.—Cap and 3, H. Yardley. 2, G. Beckwith.

**TIMELEYS** (Any other variety).—*Cock or Hen*.—1, J. Watts. 2, W. Stevens. 3, A. Silvester, hc, T. Chambers, jun. (2); J. Watts.

**OWLS** (English).—*Cock or Hen*.—1, H. Yardley. 2, J. Watts. 3, W. G. Henry, Sandymount, Co. Dublin. c, J. Chadwick, Bolton.

**TURBOTS**.—*Cock or Hen*.—1, H. G. Poole, Bradford. 2 and 3, W. J. Romley, Ballinacra, Co. Cork. hc, T. Howes, Lower Sydenham, c, E. A. Seale; G. South, New Bond Street, London; W. J. Rumley.

**DRAGONS** (Blue or Silver).—*Cock or Hen*.—Cap, L. Whitehead, Drury Lane, London. 2, W. J. W. Pass, Manchester. 3, W. Bolshaw, Northampton. hc, L. Whitehead (2); L. Watkin; G. South. c, H. Yardley; G. South.

**DRAGONS** (Any other colour).—*Cock or Hen*.—1 and 2, G. South, G. J. Lennox, hc and c, J. Chadwick.

**JACOBS**.—*Cock or Hen*.—1, E. C. Stretch. 2, T. W. Swallow, Northampton. 3, J. Stanley, hc, G. South; E. A. Seale, Kilgobbin; H. Yardley; A. Heath.

**ENTAILS**.—*Cock or Hen*.—1 and 2, F. A. Seale. 3, J. F. Loversidge, Newark. c, W. R. Morton, Kingsholm; H. Yardley; J. E. Spence.

**ANTWERPS**.—*Cock or Hen*.—1, A. Damsell, Exeter. 2 and c, J. Wright, Manchester. 3, J. F. White, Birmingham.

**ANY OTHER VARIETY**.—*Cock or Hen*.—Cap, J. K. Milner. 2, H. Yardley. Extra 2, J. T. Hines (Magpie). 3, H. W. Webb, Lower Sydenham (Archangel). hc, J. Atkins (Hyacinths); H. Draycott (White Frillback); R. White, Manchester (White Scanderoon). c, A. Silvester; O. E. Cresswell (Archangel); J. Atkins (Archangel); N. Hill (Volante) (2); H. Yardley; H. W. Webb (Archangel); J. Stanley, Blackburn.

**SELLING CLASS** (Price not to exceed 80s.).—*Cock or Hen*.—1 and 3, E. A. Seale. 2, L. Watkin, hc, O. E. Cresswell (Ice); G. J. Lenny, St. Ann's, Lewes (Dun Carriers); W. Nottage; J. Nash (Carrier). c, R. W. Richardson (Black Barb); N. Hill (Pouter).

**SELLING CLASS** (Price not to exceed 45s.).—*Cock or Hen*.—Cap, W. Nottage. 2, C. T. Higgins. 3, H. Yardley, hc, L. Watkin. c, H. Clarke, Old Smeaton, Nottingham (Black and Dun Carriers); Mrs. Ladd (Carrier); H. B. Bissay; J. Nash (Carrier); H. Yardley, c, F. R. Edmondson, Liverpool (Dun Carrier); C. H. Clarke (Black Carrier).

**SELLING CLASS** (Price not to exceed 40s.).—1, J. Nash (Dragon). 2, E. A. Seale. 3, H. Yardley, hc, J. Walker; E. A. Seale; C. F. Stanton, Sandymount, Co. Dublin (English Owls); H. Yardley; W. Allen; W. H. A. Miller. c, R. White; L. Whitehead (Pigmy Pouters); L. Nottage, Southwark (English Owls); P. R. Spencer, Hereford.

**LOCAL CLASS.**—*Cock or Hen*.—1, G. Foster, Northampton. 2, S. B. Clarke, Northampton (Dun Carrier). 3, W. Nottage (Pouter). *hc*, T. Chambers, jun.; W. Nottage (Pouter).

#### RABBITS.

**LOP-EAR** (Self colour).—*Buck or Doe*.—1 and 2, F. Banks, Doughty Street, London. 3, F. Purser, Bedford. *vhc*, T. Buckland, Oxford.

**BLACK-EAR** (Broken colour).—*Buck or Doe*.—1 and 3, F. Banks. 2, J. Boyle, Point Cup, to F. Banks.

**ANGORA**.—*Buck or Doe*.—Cup, H. Swetnam, Fulford. 2, A. Ashmead, Northampton. 3, T. Garner, Kingsthorpe. *vhc*, S. Ball, Bradford; B. W. Mason, Hull. *hc*, T. Garner; J. Hallas, Huddersfield; M. Kew, Market Overton; G. Foster.

**HIMALAYAN**.—*Buck or Doe*.—1, C. Mason, Rochdale. 2 and Extra 3, W. H. Tomlinson. 3, E. Robinson. *vhc*, J. Butterworth, Rochdale. *hc*, H. Swetnam; J. Buno, West Bromwich; J. Boyle; A. Perry; G. P. & R. Hackett, Haverstock Hill; J. Farrow, Romford. *c*, Master Nash, Brinkley, Newmarket; —Claridge, Northampton; J. Hallas.

**DUTCH**.—*Buck or Doe*.—Cup, B. W. Mason. 2, F. Sabbage, Northampton. 3, J. Boyle. *hc*, J. Hallas; A. Hudson, Holl; J. Boyle; G. P. & R. Hackett. *c*, G. P. & R. Hackett.

**SILVER-GRAY**.—*Buck or Doe*.—Cup, Miss Mortimer, Radhall, Ross. 2, A. Hudson. Extra 2, B. W. Mason. 3, W. W. Wright, Uxbridge Road, London. Extra 3, E. M. Boyd, Rochdale. *vhc*, Master A. W. Whitehouse, Northampton; G. P. & R. Hackett. *hc*, S. Ball; F. J. Smith, East Dereham; G. Wood, Clapton, Thrapstone; E. F. Talbot, Bedford; A. Hudson; J. Boyle (2). *c*, A. Ashmead; J. Steeder, Pingewick; J. Allee, Amphill; P. C. Stanley, Leamington; J. Boyle.

**ANY OTHER VARIETY**.—*Buck or Doe*.—1, Miss C. Dows (Belgian). 2, J. Hallas. 3, J. Boyle (Belgian Hare). *hc*, R. Eufham, Spalding (Belgian Hare); J. Boyle (Belgian Hare); J. Bessley, Northampton (Persian); J. Tebbutt, Northampton (Patagonian); P. C. Stanley (Siberian).

**SPECIAL SELLING CLASS**.—*Buck or Doe*.—1, Smith & Simmonds, Gosport. 2, A. Ashmead (Angora). 3, F. J. Smith (Lop). *vhc*, F. Banks. *hc*, Rev. T. C. Beasley, Saffron Walden (Dutch); J. C. Garrington, West Bromwich; J. Hallas; F. Sabbage; F. Purser; A. Perry, Hardingsstone. *c*, Master T. M. Nash; J. Steeder (Lop); T. Garner (Angoras).

**LOCAL CLASS**.—*Buck or Doe*.—1, F. Sabbage. 2, W. G. Hancock. 3, S. Russell, Northampton. *vhc*, A. Ashmead. *hc*, A. W. Whitehouse.

#### CATS.

**LONG HAIR**.—*Male or Female*.—1, E. M. Roysds. 2, W. Prentice, jun., Aldwinkle, Thrapstone. 3, E. Crompton, Pitsford, Northampton. *hc*, J. W. Howard; Miss Sapill, Northampton.

**TABIES**.—*Male or Female*.—1, E. Baxter, Dalston Lane, London. 2, G. Ellis, Cornhill, London. 3, F. Cole, Northampton.

**ANY OTHER VARIETY**.—*Male or Female*.—1, F. Longland. 2, F. Turner, Crispin, Kettering. 3, Mrs. Parker. Extra 3, G. Reynolds, Northampton.

**KITTEN**.—*Male or Female*.—3, — Shipman, Northampton.

**JUDGES**.—*Poultry*: Mr. E. Hewitt, Mr. R. Teebay. *Pigeons*: Mr. W. B. Tegetmeier, Mr. F. Gresham (Pouters only). *Rabbits*: Mr. Hutton. *Cats*: Mrs. A. Pell; Miss Beasley.

## DORCHESTER POULTRY AND PIGEON SHOW.

(From a Correspondent.)

The first Exhibition of the Dorset County Poultry and Pigeon Society must be pronounced a great success. The entries numbered between five and six hundred, and up to the time of our leaving on the 25th, the Corn Exchange was thronged with visitors—so much so, that locomotion was somewhat difficult, and a thorough inspection of the specimens, especially those in the lower tiers, next to an impossibility, as the space between the rows of pens was rather limited. The fact of the matter was, the Show, like many others, was too large for the building.

As in the case of all first shows, there were a few little matters requiring alteration; for instance, the charge for admission on the first day up to five o'clock was 2s. 6d. Many exhibitors complained very much at being charged this amount; but worse than this was the fact, that once in the Show you had to stop there, or if you left the Exchange pay a second 2s. 6d. to re-enter, as the Committee stoutly refused to allow even exhibitors a pass. We thought this an act of illiberality they would do well to correct another year; in fact, it would be much better to give each exhibitor a ticket of admission as is done at Bristol and many other shows; it prevents a great amount of dissatisfaction, and the loss to the Committee would be very trifling. This is a subject well worthy of their consideration.

The three classes of *Game* mustered thirty-seven pens, the best of them being the Brown Reds. The Black Reds were, however, the strongest in point of numbers. Mr. Stagg well deserved his position, and we are not sure but that he ought to have been second as well as first, as we did not like the comb of the hen in the second-prize pen. The third prize fell to an exhibitor from Jersey. In Brown Reds, Mr. Warde took first, as also the cup for the best pen of *Game*. The Variety class was not good, and sadly missed Mr. S. Matthews. The first-prize Duckwings were large and coarse. The awards in the Coloured *Dorkings* gave rise to some dissatisfaction, as the first prize went to a pen in which the cock had only one eye; he also had more white in his tail than suits our taste. We should have preferred the second-prize pen, although they show the effects of over-exhibition. Silver-Grays only numbered four entries, and the first prize was withheld. Whites formed the largest of the *Dorking* classes, there being twelve pens entered. Mr. Rodbard kept his old position in *Spanish*, taking first; Mr. Jones being placed. We certainly think he should at least have been second. In *Cochins* the awards were not received with favour. The first-prize Buffs were a very badly matched pair, and in every respect inferior to the second-prize pen; and in the Variety class the first prize went to what was most certainly Mr. Whitworth's worst pen of Whites, his best pen being unnoticed. Messrs. Newham & Manby again stood

first in Dark *Brahmas*, Mr. Lingwood having to be content with second place. In *Lights*, both Mr. Dean and Mr. Maynard had to give way to Mr. Bloodworth. *Hamburgs* were much more numerous than is usually seen so far south, there being no less than fifty-nine pens, twenty-three of them being Gold-pencilled; the quality was, however, hardly in proportion, as with the exception of the prize pen there were no noteworthy specimens, and of those the Golden were better than the Silvers. There were twelve entries of *Polands*. Mr. Hinton came to the front with his Silvers, taking first and the cup for the best pen in this and the next class. *Malays*.—In these he was not so fortunate, his pen should certainly have taken a higher place than third. The awards in this class were not at all to our liking. In *French*, Mr. Dring had it all his own way, taking first in both classes with beautiful birds. In the Variety class the first prize went to a good pen of Andalusians. Black Red *Game Bantams* were numerous. We thought the Judges rather sparing of the commendations, one pen only being highly commended in a class of twenty-six pens. In the Variety class all the prizes went to Duckwings. Mr. Eston's pen was very much out of condition, or the birds would certainly have held a more prominent position; as it was they were unnoticed. Laced, only four pens, and these of little merit. The Selling classes were large and contained many good birds.

Amongst the *Ducks*, the Blacks formed certainly the largest and the best class. Mr. Kelleway took first with a pen in good condition, Mr. Sainsbury being second. This exhibitor's birds were certainly not in the condition we have seen them. The third-prize pen we did not like; it was about the worst in the class, being much more brown than black, and very much out of condition. The Variety Duck class, with the exception of one pen of Carolinas which took first, was wretched.

*Turkeys* were very good. There was a pretty show of dead poultry and eggs, and amongst the extra stock were some very nice Pheasants, and as a curiosity, a pen containing five tame Partridges.

*Pigeons* numbered about 120 entries, Carriers, Pouters, Dragons, and Antwerps forming the best classes.

The arrangements, with the exceptions already mentioned, were good, and the rules of the Committee carried out to the letter. The pens were supplied by Mr. Billett, of Southampton, and under his personal superintendence the birds were well cared for.

## SEPARATING PIGEONS AFTER THE BREEDING SEASON.

This seems to me to be a very important subject for all Pigeon fanciers. Ought birds to be separated when they have done breeding, say after October? No doubt there are great advantages attending it, which Mr. Eston shows in his well-known work. I have now bred high-class Pigeons for some years, and have invariably unmatched them about the beginning of October, and often earlier, pairing again some time in March with varying success. Some fanciers say, "By all means part your birds;" others, "Keep them together; it is unnatural to do otherwise." The latter argue that the birds fret and get out of health, more particularly the cocks, when they are deprived of each other's society; and in support of this I have myself lost two cock birds during the last two months without any apparent cause, one of them going very suddenly. Perhaps some able writer will take up the matter, and impart his knowledge to the readers of this Journal.—ALMOND TUMBLER.

**DOVER AND CINQUE PORTS POULTRY SHOW.**—The third annual Exhibition will take place at Dover on the 8th and 9th of April next. Last year's Show passed off with the greatest *clat*, and the present prospects are of even greater success. Prizes amounting to nearly £100 will be given. The two principal railways running through Kent have their termini at Dover, and thus offer especial facilities to those who live at a distance. An advertisement in another column announces full particulars.

## RABBITS OF 1873.

Lops have advanced considerably in perfection and favour. Instead of the thin lanky Rabbit, which for length of ear alone held the highest honours at an exhibition, we now have length of ears combined with all the other properties. Take for example the handsome Black-and-white buck of Mr. James Cranch, of London, which is undoubtedly the finest Lop ever bred, uniting as he does extraordinary length of ear with the proper marking of a jet black shade, and large size. I only set forth this Rabbit as an example, for there are now nearly a score of Lops whose ears measure 23 inches long, possessing the other properties in equal superiority.

SILVER-GREYS have made themselves more prominent, indeed they have excelled some old-standing favourites. The desirable Chinchilla shade of the fur is now very nearly approached by

English-bred specimens. The most conspicuous fanciers of this breed who have exhibited successfully are Messrs. A. H. Easten, Hull; S. Ball, Bradford; and J. Boyle, jun., Blackburn.

HIMALAYAN have been well upheld at all the shows of the season. The blackness of the points, so necessary in an exhibition Rabbit of this variety, have been often shown to perfection. The principal breeders of prize-winners are Messrs. B. S. Rothwell, S. Ball, J. W. Harling, Burnley; H. White, Rochdale; W. H. Tomlinson, Newark; and G. T. Hutton, Bradford.

ANGORAS have hardly kept pace with some of the newer introductions, still they have certainly improved. Seldom is that straight, clouded wool seen; the more silky texture of the fur has long displaced it. Angoras have many supporters, whose names are already familiar; amongst others I may mention W. Whitworth, jun., Manchester; and G. S. Hutton, Bradford.

DUTCH have now become general favourites. At nearly all the leading shows the Dutch have had a class to themselves, and even where they have not, have generally carried off the majority of the prizes in the class they competed in. The new style of marking has become general, in fact the old has almost disappeared from the show pen. This new marking may be handsome, yet I think its precedent far handsomer, and hope that with the new season it will return to its previous estimation. The breeders of the novel variety, who have more or less distinguished themselves by their Rabbits, are Messrs. J. Boyle, jun.; J. Mason, Hull; and W. Whitworth, jun.

BELGIAN HARES are rapidly gaining favour, chiefly on account of their size, and partly by the unceasing endeavours of some fanciers to establish them in this country. Three shows have already given a separate class to them—viz., Boston, Edinburgh, and the Crystal Palace, which have always been well filled with good specimens. To enumerate the many fanciers who have given this breed their attention would be very difficult; I can only name a few of them. Messrs. W. Whitworth, jun.; J. Boyle, jun.; W. Massay, Spalding; and Messrs. G. P. & R. Hackett, London, have had perhaps the lion's share.

PATAGONIANS have, I regret to say, been much neglected for their rival, the Belgian Hare. I will not here attempt to discuss the merits of this breed, but simply state that it is deserving of more patronage than it at present receives.

WHITE PATAGONIANS are now to be found in England. Of the other varieties I have little to say.

THE SIBERIAN has slowly advanced, but certainly not to the extent it should.

POLISH have almost disappeared.

The new introduction, FLEMISH GIANT, has scarcely been noticed, which, considering its immense size, is to be regretted.

The longest-eared Rabbit yet bred is Mr. J. Cranch's, its ears measure 24 inches; the widest-eared, Mr. G. Phelps's, measuring 6½ inches. The heaviest Rabbit of the season was fed by Mr. W. Canner, of Leicester, and weighed 17 lbs. 6 ozs.; this was run very closely by Mr. T. Davis, of Southwell, with his 17 lbs. 4 oz. Lop doe.—A RABBIT FANCIER.

THE WEST RIDING ORNITHOLOGICAL SOCIETY.—An attempt is to be made by this Society to establish an annual exhibition of Pigeons, Cage Birds, Cats, and Rabbits on the 7th and 8th of April, and in a note now before us the Secretary says, "We hope to make it a great success—that it may become as permanent as the Leeds Smithfield Show." It is under the patronage of the Mayor and members of the borough of Leeds. The entries close on March 28th, and the Show will be held in the Music Hall, within five minutes' walk of the railway stations.

## CRYSTAL PALACE BEE AND HONEY SHOW.

I AM sorry to find it is only intended to be a local show, and chiefly in the interest of fancy-hive makers, because there is such a division and sub-division of the same thing, that the prizes are so cut down that no one from a distance will be likely to compete.

One hundred pounds in prizes! First-rate, and quite sufficient to attract apiculturists from all parts of the kingdom if properly divided. I have looked the schedule through, and have wondered why in the hive classes there is not a class for the best hive for honey and for profit. They are all for the "most improved" of this kind and the other kind, and who is to say which is the "most improved," unless those particular kinds and particular improvements have had a fair trial in competition with other kinds? I can only think that it has been drawn up carefully to avoid the exhibition of the best and most profitable kind of hive.

In the bee classes I see there is to be a prize for the most beautiful progeny of a queen, but the queen herself is not to be taken into account; and why not? I do not know, but think if any profitable advantage (which I doubt) is to be derived from beauty, the queen should be of the first importance instead of the second. Then comes the largest breed of bees. I suppose it is thought they will be stronger if large, and able to carry more honey, forgetting that if so they will be likely to consume

more. But then this lot may be from any nation, and I wonder who will bring bees from abroad for the chance of winning £2. But perhaps some one has something extra in this line already imported, and not far off from the scene of exhibition.

In the honey classes A and B appear to me to be the best arranged if the amount of the prizes had been more liberal. Who will take a lot of supers, say ten or twenty, to London for the chance of winning £2? It ought to have been £5 at the least. Then the ten classes from C to M inclusive might very well be put into three—viz., glass, wood, and straw supers, and for the best of each kind. To classes N, O, and P I have no objection, but wonder why Q should have crept in. Is honey either better or worse for being got out of the comb by the extractor?

I am glad to see a chance for cottagers, and hope they will come up in full force if there are any cottagers in the vicinity of London who keep bees.

In the miscellaneous classes all is very good except the essay department, which I think will not do any good, and will be simply £8 thrown away, besides the valuable time of those who may venture to compete. The fertilisation of queens by selected drones must of necessity be profitless and uncertain, and the cure of foul brood is simply impossible.

I believe a common straw hive is the best for honey-gathering purposes; another believes a bar-frame is, another the Stewarton, another the collateral. But one fact is worth a dozen theories; and I will suggest, as the best hive for profit is left out of the schedule, that a fair trial be made during the coming summer.

—T. BAGSHAW, *Longnor, Burton.*

## OUR LETTER BOX.

BRABMA CATARRHED (*D. J.*).—Your cock is suffering from cold. In almost any other breed it would turn to roup, but Brahmas are not subject to it. Give him a tablespoonful of castor oil every other day for fourteen days, and let him have two feeds of toasted crust soaked in old strong ale every day. He will recover.

FATTENING BRAHMAS (*R. J. S.*).—You should have only the natural difficulty, which is, that part of the food you give must go in growth. Fretting, like ill-temper, prevents putting on fat, and we know nothing that will induce the unhappy mood more certainly than to be in confinement with the opportunity of seeing others at liberty. Prevent it. Exercise, again, is against fattening; prevent it. Put your birds in a small coop, such as is described and drawn in Baily's "Fowls," and allow them only as much room as is necessary to stand up and sit down again. Put this coop in a dark out-house away from the door, and let the coop be covered with sacks or old carpet; not only to keep out light and draught, but to ensure warmth. These need only be removed three times per day for the purpose of feeding. They will soon be fat enough to draft.

POULTRY YARDS (*H. B.*).—You have ample accommodation for two breeds, but if you have no other object in view than you describe we cannot imagine why you want a cross. You have every convenience for two breeds, and plenty of room. You can keep three. During the breeding season you can well put a cock and six hens in each of the smaller yards. The northern aspect will not interfere with or affect them. Be content with two breeds. Keep Brahmas and Dorkings. Let the former have two of the smaller runs. Let that joining the large run be allotted to the Dorkings, and let them have the large run as well. This should also be devoted to the chickens as soon as they are hatched. For some months of the year all the birds might run together, say from August till November; after that they should be separated, on account of the approach of the breeding season. Taken on the whole, we know no more useful fowl than the Dorking; but it must have a run. Next in our estimation is the Brahma. They bear confinement well. You need not doubt the fertility of your eggs. If you are bent on a cross, put a Brahma cock to Dorking hens. You have plenty of room for thirty fowls. If you do not wish to keep so many, keep a cock and eight hens of each breed.

BRAHMAS LAYING SOFT EGGS (*A. P.*).—There is something amiss with one or two of your hens. It will come right; but if you can discover which it is, you will help considerably if you give a tablespoonful of castor oil. You mention only two meals per day. Give the same quantity in three feeds. Give meal morning and evening; whole corn at mid-day. Do not increase the quantity. Over and improper feeding were never so ripe as they are now.

COCK'S BEAK DIVIDED (*A. S. B.*).—We fear the beak will not do well if let alone. We advise you to cut away the outside of the two pieces into which it is split, as long as you cut only horn. You must not make it bleed. You must then bring the ends of the two pieces together, but it will always be a deformed beak. It will not interfere with him for any useful purpose.

SHELL-LESS EGGS (*I. K. L.*).—Your fowls are well cared for, and we imagine the shell-less eggs to be accidental, arising from temporary derangement of the egg-producing organs. If you can discover the offenders, we have no doubt a couple of doses of castor oil given at twenty-four hours' interval will prove a cure. We will offer a few suggestions which will, we hope and believe, be found useful. Give the barley meal slaked in the morning; discontinue the sharps and Indian meal. Let the mid-day meal be of whole corn—barley, or oats and maize. Feed on barley meal, or better still if you have them, on ground oats. Discontinue the potatoes; they are bad food, and we should not be surprised if they have not much to do with causing your complaint. Throw down a harrowload of bricklayers' rubbish in their haunts. You cannot depend on their picking the mortar from the walls.

BRAHMA POOTRAS (*Idem*).—They are good useful family fowls, making large size at an early age. They are not as good table fowls as Houdans. We do not like crosses much, and we always object to mingling sitters and non-sitters. Taken as a whole for an ordinary run where a hardy bird is wanted, and one that requires no great care at any period of its life, we know nothing better than the Brahma.

COCK HEN-PECKED (*A. F. L.*).—All hens like to pick any raw and bleeding places they see in themselves or in the cock. They particularly like to eat the cock's comb, and he seems to have no objection; he will stand still during the operation, only flinching now and then when one gives a harder peck or

pull than common. We have always found it quite safe to put a cock back when the wounds were quite healed, but not while any trace of them remained. As a rule it is principally done by one hen. We advise you to watch them or to have them watched. You will see, after they are fed and have satisfied their hunger, one of them will stare about without any apparent object, and then walk deliberately to the cock, who will, if necessary, facilitate operations by lowering his head. It may be that two do it; remove them both; if you do not, all the others will learn the habit. As it more frequently arises from their inability to find something of which they stand in need than from mischief, it is as well to try every remedy. The first will be to supply them with a barrowload of bricklayers' rubbish; the second to supply them, daily if possible, with large sods of growing grass cut with plenty of earth to them, also to give all the garden rubbish, refuse green food, path-sweepings, &c. They are clever at finding food among these things, and they keep them employed. If all these fail, you must allow the cocks to run with them for a couple of hours only in the morning, and then remove them till the next day. It is a habit they forget after a time.

**TURKEY ON COMMON HEN'S EGGS (Turkey Hen).**—There is no difficulty in sitting Turkeys on fowl's eggs. One will cover twenty-four or thirty. Hen Turkeys sit well, but they are the worst possible mothers. If you want to rear table poultry you will not require their help. There is no mistake so great as to hatch all your chickens at the same time. This is the cause of the common complaint in country houses—that they have nice tender poultry for a couple of months, and then not an eatable fowl. In a very short time it will be the number, not the lack, of broody hens that will annoy you. We know not what your consumption is, but say you wish to have six fowls weekly for table purposes. To be sure of the number put down now three hens on thirteen eggs each. They will come out early in April. They will be fit for the table in August. Put down the same number in April; they will be fit in September, and so on, providing for each month. In July you may put down a larger number, as chickens do not arrive at maturity or grow as fast in the winter months. You will find this a simple and easy method; and if you will be careful to kill off one brood before you begin another, you will never be disappointed in the quality of your poultry.

**BRAHMA PLUMAGE (E. C.).**—The Brahma cock entirely black and brown is not a pure Brahma. The only brown that can be allowed in a Brahma cock is one or two brown feathers on the wing. They are better without even these. They will never moult them out. From your description none of those you mention are worth keeping. It would seem as though they had some Cochon blood in them.

**FOWLS WITH DUCKS (Julius).**—It is always considered bad work to keep Ducks and fowls together in a confined space. We advise you to give up the Spanish and to keep Brahmas only, giving the hen-house and run at the end of the garden where they can have grass. You may keep which Duck you like, but only one. Let them have the small space. You may keep the Pigeons where you like, as they will roost above the other birds, and are fond of perching high.

**BUCKWHEAT (M. B.).**—Buckwheat or bran may be obtained of any London agricultural seedsman. It is grown in the eastern counties of England, and would grow in Yorkshire.

**DORCHESTER POULTRY SHOW.**—Mr. E. Martin, of Trethowel, St. Austell, was commended for Black Reds, and was second for Duckwings, and not Mr. Martin, of Southpor.

**BROMLEY POULTRY SHOW.**—Mr. C. W. Gedney, Hon. Sec. of this Show, writes to us that we charged him and those associated with him as being swindlers; then that we "manufactured a series of paragraphs," stated that the managers connived at theft, that they gulled and swindled the exhibitors, and palmed off upon them a prize card at one shilling each. All that we have published were *bona-fide* letters from correspondents and our reporter; and as we do not know Mr. Gedney, so certainly we never attributed to him dishonesty; and what our contributors have written was directed against instances of mismanagement in the Show.

**PIGEONS IN CANADA.**—Mr. Herbert, of Ottawa, writes:—"I sent £2 to W. Crook, of Swansea, who advertised in our Journal. I have heard nothing of him or Pigeons since I sent the money, May 9th. In November I sent to H. Yardley for two pairs of High-flying Tumblers, for which I paid 33s. They arrived here in good condition; they can fly about as well as tame Ducks."

**PIGEON TRAP (W. Randall).**—If you mean one to keep your own Pigeons in as you may wish, there is a fair sketch of one in "Dixon's Dovecote," page 88.

**BEES EATING ROASTED BIRDS (R. P., Subscriber).**—You say that "there is no mistake whatever about giving bees roasted sparrows to eat, and that the bees do eat them;" yet you say you have "not seen them do so yourself, nor have you ever taken the trouble to give your bees such food." Now we must confess ourselves to be altogether sceptical on the subject. Such food is wholly unsuited to bees, and foreign to their nature. But our advice to you is, Try yourself whether or not roasted sparrows will feed bees; "seeing is believing." If you find they devour them up let us know, and we will try the evidence of our own senses on the subject. As we are at present utterly incredulous, and believe that stones are as suitable food for English men as roasted sparrows for Irish bees, we feel indisposed to give our cook the trouble of preparing this unusual bee-food, and running the risk of our sons taking out a commission against us *de lunatico inquirendo*. The trial will do your bees no harm, for their own sagacity will save them from any risk of danger in that direction.

**STOCKS OF BEES DEAD (A Young Beginner).**—It is difficult to say positively why your bees have died. But most probably they lost their queen last summer, if they have not suffered from foul brood, or been unable to get out of doors through the choking-up of the entrances. Starvation is out of the question this mild winter, as they had several pounds of honey in each hive.

**BEE-KEEPER'S DRESS—HIVE VANISHED—MANAGEMENT (A Monmouthshire Lady Bee-keeper).**—We really know of no better material than leno for a bee-dress. Anything which confines the air must needs be hot, but leno is as good as anything for the purpose. We fear you must submit to the inconvenience from which we ourselves have often suffered. By all means scrape off the varnish if there is any smell, or else your bees will make to themselves wings and fly away, especially your swarms. Fresh paint is equally bad. We never think of using anything but the native wood or straw, taking care to cover well. Your bees will doubtless often find their way in by the side opening you speak of, but you might keep them out by means of a veil of leno, which would withstand a considerable current of air. Now is the very best time to shift your bees if they are actually in the observatory hive, but it will

hardly do a week later. If it is now tenacious we should prefer to wait for a swarm to live in it in May. By all means keep a thick cloth or flannel cover over your glass hive. Bees will work in the light, but it is not their custom, and, besides, it is important to prevent the escape of as much warmth as possible. In shifting hives as you propose, with a view to artificial swarming, it is advisable to have your stocks as far apart as you can, else they will often disappoint you by the bees going into the wrong hives. No doubt you could raise an "artificial queen" in your glass hive, but we should prefer to raise her in some other stock. Observatory hives are good for little else but observation. When searching for the queen you may shift it on one side as you propose; but the queen is not looked for in the open air.

**PETTIGREW'S HIVES (T. C. H.).**—Mr. Pettigrew's hives are round with flat tops, 16 and 18 inches wide, and 12 inches deep, sides perpendicular. The holes in the centre of their crowns for supering are 4 inches wide, and the doors on the flight boards are 4 inches wide and 1 inch high. Four and five cross sticks are put in each hive.

**WEARING A BEE-DRESS (Eaten but not Dismayed).**—In examining hives Mr. Pettigrew never wears a bee-dress. In summer, or when the bees are actively at work, it is necessary to use smoke from fustian rags in all examinations and operations. By using plenty of smoke the most timid and inexperienced bee-keeper may become courageous and expert in the most difficult operations of bee-management. The removal of the hive from the board does not hinder honey-gathering.

## METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Baromet. ter at 32° and Sea level.	Hygromet- er.		Direction of Wind.	Temp. of Sun at 1 ft.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
March.										
We. 4	30.538	36.0	36.0	N.E.	42.3	46.8	30.8	67.0	27.6	—
Th. 5	30.566	40.2	39.0	W.	41.1	49.9	33.3	77.9	29.1	—
Fri. 6	30.727	42.0	40.2	N.E.	42.0	52.4	39.6	96.4	36.5	—
Sat. 7	30.577	35.2	34.8	N.W.	42.1	53.1	29.2	88.9	26.6	—
Sun. 8	30.110	34.1	33.3	N.W.	41.0	39.2	29.4	93.2	25.6	0.017
Mon. 9	29.677	43.0	41.1	S.W.	41.9	44.3	35.4	49.9	31.8	—
Tu. 10	29.691	29.9	29.2	N.W.	40.6	37.6	25.5	81.0	23.4	0.060
Means	30.263	37.2	36.1		41.6	48.0	31.6	79.2	28.6	0.077

## REMARKS.

4th.—Rather dull morning, and till noon, then pleasant, though not much sun.  
5th.—Another thick morning, but a very pleasant day, at times very bright, and very little wind.

6th.—Slightly damp in the morning, but soon cleared off, and very bright by noon. A remarkably fine "mackerel" sky just before sunset; during the day the sun was hot, but the wind cold.

7th.—White frost in morning, but followed by a beautiful spring-like day.

8th.—Fair but foggy early; very fine bright day, but with a cold wind and rapidly falling barometer.

9th.—Slight rain in early morning, dark and snowing before noon for more than an hour, but not remaining on the ground; after that fine, but snow again in the evening, and which remained all night.

10th.—Very bright morning, but heavy snow before noon, and still heavier in the afternoon. A complete wintry day; the snow fell very thickly, some "snowballs" fell, and some of the flakes of ordinary snow were unusually large; bright star-lit night.

Temperature about 4° lower than last week, the 10th being very cold, ground covered with snow.—G. J. SYMONS.

## COVENT GARDEN MARKET.—MARCH 11.

We have no alterations here worth quoting, the general business of the markets being very little influenced by any increase of business or other causes. Large stocks of Potatoes are on hand, both at the depôts and elsewhere.

## FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	1	0	2	6	Mulberries.....	1	0	0	0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	1	0	0	0	Oranges.....	100	4	0	12
Chestnuts.....	1	0	0	0	Peaches.....	doz.	0	0	0
Currants.....	1	0	0	0	Pears, kitchen.....	doz.	2	0	0
Black.....	doz.	0	0	0	dessert.....	doz.	3	0	10
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	4	0	0
Filberts.....	lb.	1	0	1	Plums.....	1	0	0	0
Cobs.....	lb.	1	0	1	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, house.....	lb.	2	0	0	Strawberries.....	1	0	0	0
Lemons.....	100	4	0	0	Walnuts.....	1	0	0	0
Melons.....	each	0	0	0	ditto.....	100	2	0	2

## VEGETABLES.

		d.	s.	d.			s.	d.	s.	d.
Artichokes.....	doz.	3	0	6	Mushrooms.....	pottle	1	0	2	0
Asparagus.....	100	4	0	8	Mustard & Cress.....	punnet	0	2	0	0
French.....	18	0	25	0	Onions.....	bushel	4	0	6	0
Beans, Kidney.....	100	2	0	0	pickling.....	quart	0	6	0	0
Beet, Red.....	doz.	1	0	8	Parley per doz.	bunches	1	0	6	0
Broccoli.....	bundle	0	3	1	Parsnips.....	doz.	0	9	1	0
Cabbage.....	doz.	1	0	6	Peas.....	quart	0	0	6	0
Capsicums.....	100	0	0	0	Potatoes.....	bushel	3	6	4	0
Carrots.....	bunch	0	6	0	Kidney.....	do.	0	0	0	0
Cauliflower.....	doz.	3	0	6	Round.....	do.	0	0	6	0
Celery.....	1	6	2	0	Radishes.....	doz.	1	0	1	0
Coleworts.....	doz.	2	6	4	Rhubarb.....	bundle	0	9	1	6
Cucumbers.....	each	1	0	2	Salsify.....	bundle	1	6	0	0
pickling.....	doz.	0	0	0	Savoy.....	doz.	1	0	2	0
Endive.....	doz.	2	0	0	Scorzoneria.....	bundle	1	0	0	0
Fennel.....	bunch	0	3	0	Sea-kale.....	basket	1	0	2	0
Garlic.....	lb.	0	6	0	Shallots.....	lb.	0	3	0	0
Herbs.....	bunch	0	3	0	Spinach.....	bundle	2	0	0	0
Horseradish.....	bundle	3	0	4	Tomatoes.....	doz.	0	0	0	0
Leeks.....	bunch	0	3	0	Turnips.....	bunch	0	6	0	4
Lettuce.....	doz.	1	0	4	Vegetable Marrows.....		0	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 19—25, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.	Moon Rises.		Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.		m.	h.				
19	Th	Meeting of Royal and Linnean Societies.	50.9	33.0	41.9	15	7	46	9	51	6	11	8	1	78
20	F	Spring commences, 7 P.M.	51.1	33.8	42.5	17	5	6	10	6	7	42	9	2	79
21	S		50.7	32.5	41.6	19	2	6	12	6	25	7	13	3	80
22	SUN	5 SUNDAY IN LENT.	50.4	34.3	42.3	20	0	6	14	6	47	7	morn.	4	81
23	M	Meeting of Royal Geographical Society.	50.7	33.1	41.9	18	53	5	16	6	18	8	40	5	82
24	Tu	[8.30 P.M.]	48.7	31.7	40.2	16	56	5	17	6	59	8	58	1	83
25	W	Royal Botanic Society's Spring Show.	50.9	32.8	41.9	16	53	5	19	6	53	9	3	3	84

From observations taken near London during forty-three years, the average day temperature of the week is 50.5°; and its night temperature 33.0°. The greatest heat was 69° on the 20th, 1835; and the lowest cold 14° on the 25th, 1859. The greatest fall of rain was 1.11 inch.

## HEDGES, AND THE PLANTS TO MAKE THEM WITH.

**O**F the objects on which cultivation is brought to bear there is, perhaps, none that presents a greater diversity in the results sought to be attained than that most indispensable of all fences, the hedge. Timber, brick and stone, with or without mortar, as well as the varied forms that wrought and cast iron are made to take, all more or less compete with the living hedge as a boundary between properties and protection against cattle, but the hedge still survives, and imparts a degree of clothing to a district which artificial objects fail to do, also in most instances affording more shelter than the hand-made structure has any pretensions to do. My object, however, is not to contrast the merits of a live fence with those of a dead one, but to ascertain which are the most suitable plants for hedges, and to point out how one that was brought before the public some years ago as likely to be useful for the purpose, has failed, and is now but rarely met with; in fact, it now only occurs in the back shrubberies, or other out-of-the-way places. Before drawing attention to the merits of other plants let us take a glance at this, and see how far it is entitled to the high character given of it many years ago.

*Maclura aurantiaca*, or Osage Orange, is a deciduous shrub of rather formidable appearance in consequence of the prickles with which it is armed, neither is it deficient in habit nor in hardiness for the purpose of making a fence capable of withstanding cattle; but somehow it has not found its way into general use, neither am I acquainted with any extent of hedge formed of this plant—in fact, I am not certain that I have seen it used at all in this capacity since 1857, when a hedge of it was pointed out to me at Fairlawn, in Kent, that was fully exposed on one side at least to the tender mercies of sheep and cattle, and it seemed to answer pretty well, was well clothed with foliage, and in other respects was a formidable closely-trimmed fence. It was clipped at about the usual height for Thorn hedges, and when I saw it (September) it was a good rival to the Quickset. As I have not seen it since that time, and only heard of it indirectly, I have but an imperfect idea how it has answered the expectations formed of it since that time; but the fact of the *Maclura* being so little used would imply that it is in some way deficient in the requisites of a good hedge-plant. My impression at the time, confirmed by what I have noticed of some single plants here, was that the later growths of the season do not ripen, even in hot dry summers like that of 1858. Growth continues so late that the tips rarely harden sufficiently, and, like the *Fuchsia*, always die-off, more or less, during the autumn or winter.

The plant seems to be well furnished with branches, and an abundance of very formidable thorns, much more so than the Quickset—in fact, when growing amongst other shrubs, I do not know of anything more likely

to keep out intruders. The foliage also is bright, shining, and on the whole attractive, and the growth of the plant in all the cases I have met with is as rapid as need be wished for in a hedge-plant. I have been told that in some parts of the Canadian Dominion it is used for hedges where the climate is too severe for the Quickset; so that we may fairly place it amongst the hardiest of plants. Yet there may be a difference between an English and a Canadian summer that may enable the *Maclura* to endure the winter of Canada better than that of this country; for in all probability the fine sunny autumns of North America ripen the tips as well as the Hawthorn ripens with us. Now, how has it comforted itself in hard winters in this country, such, for instance, as those of 1860-61 and 1866-67? Possibly it may have succumbed under the severities of these, and its claim as a hedge-plant been extinguished for the time, but of this I would like to hear more from those having experience of the plant.

*Colutea horrida*.—I will now glance at another plant, not, I fear, plentiful enough to form hedges to any great extent, but I will ask, Has anyone used *Colutea horrida* for that purpose, for which its touch-me-not character would seem to fit it well? I believe it to be sufficiently hardy for most situations that are tolerably dry, and it is not so shy a grower as some plants are. It certainly has not the fault of growing so late in the autumn as not to ripen the ends of the shoots; for the growth being moderate and the habit good, it seems well adapted for a hedge or fence almost without training or pruning of any kind, and the shoots being always of a rich green hue, the appearance must be good. I should certainly think it must make a sturdy fence, as every bit of it is pointed, and I should say as difficult to approach by man or beast as any plant I know, unless it be some of the Cactus tribe. I have a strong impression that if it can be made to answer it will drive even the all-important Quickset out of the field, and some one having a favourable position should try it. Furze has no chance with it in keeping out intruders.

*Colletia cruciata* is a not less interesting object for hedge-culture. It differs widely from the *Colutea*, but its spines are scarcely less formidable. The plant, I imagine, is also much less hardy, and of slower growth; it may be advantageously grown for its curious character, and its white flowers are likewise attractive, being in some seasons produced in great abundance; it is not yet plentiful enough to become a competitor with other plants to form hedges, although its habit and appearance entitle it to notice.

It is not intended in this article to enumerate all the numerous plants used for hedges. The most common are Holly, Yew, Box, Arbor-Vite, Privet (both alone and mixed with other plants), several Cypresses, Laurels, and the like. The term fence cannot well be applied to many of these, although they make highly ornamental hedges, but I believe that *Berberis Darwinii* might be advantageously tried for the former purpose; it is of sturdy growth, and if sheep and cattle could only be prevented eating it,

it would quickly become a strong fence. Another useful Berberis, however, is *B. Wallichii*, which resembles it very much, and both make excellent ornamental evergreen hedges. The *Aucuba* is, perhaps, as easily kept in order as any evergreen shrub, and amongst ornamental deciduous subjects the *Fuchsia* ranks high; but a good hedge may also be formed of the deciduous kinds of *Berberis*, of which the common one is, perhaps, the best, at the same time I fear its beauty will be sadly marred when subjected to the close trimming that hedges have to undergo.—J. ROSSON.

### ROSES IN DORSETSHIRE.

I AM glad to say that the Roses here are "in high fettle." I have just pulled down the protective molehills. The leaders are out, and probably will be spoiled. This matters not, as there are always two side eyes that will start in due time. The spoiled scions may then be shortened; and one, or other, or both of the side eyes may be suffered to replace the injured centre scion. Do not pull out the injured scion, but merely shorten it. It will then proceed anew and act as a replacer.

I have about 2400 Roses, chiefly on the Manetti stock. I never knew them winter so well. The ground should now be deeply moved by Parkes's fork, and the ground over the roots well limed to destroy fungus. Mr. Prince wished me not to say a word about his seedling Briar Roses, but I must do my duty by the public and say I am much pleased with them.

As regards the late election of Roses there are two Roses much praised—namely André Dunand and François Michelon. I saw both in numbers at the Dorset Nurseries, Blandford. I bought three plants of the latter, which looks like a good climber, the wood being growthy, but tinsel. The whole rank of the former was so bad that I would not have accepted them. My impression is that Edward Morren, a Rose of 1868, is the finest named, and good in every respect. I believe it will outlast them all. I believe Countess of Oxford and Louis Van Houtte to be good cards, also the Tea Rose Madame Hippolyte Jamsin. Some of the Roses named in the election are simply miserable. I do not undertake to run them down, but only to name such as I will be responsible for. Louis Van Houtte did not succeed on a Manetti stock here, but on the seedling Briar the plants are uniform and admirable. It is said that Briar seedlings throw out brood. Nothing is more untrue. Much, of course, depends on the propagation.

Mr. Prince's seedling Briar Roses are done in first-rate style. I have not yet seen enough of them to compare them with Manetti Roses of the same era of plantation, but as far as I have seen them I can truly say they have held their own.—W. F. RADCLIFFE, *Okeford Fitzpaine*.

### ROYAL HORTICULTURAL SOCIETY.

MARCH 18TH.

THE general character of this, the Society's first Show of the season, may be summed-up in a few words. Good as former shows at the same season have been, never in all respects have we had one so good; the number of subjects exhibited, their quality, their arrangement, and the almost summer weather which visitors had to see them in, have never in their happy combination been equalled at any previous show held at the same time.

Hyacinths, as usual, formed the great feature. Some said they were better than last year, some that they were not so good, and it may safely be said that neither was far wrong, the difference was so difficult to measure. Having a vivid recollection of Messrs. Veitch's magnificent collections of last year, with which they carried all before them, we rather incline to the latter opinion, but the difference in their case between last year and this was scarcely appreciable.

Class 1 was for fifty Hyacinths (nurserymen). In this Messrs. Veitch & Sons, of Chelsea, took the highest position with a collection in which were some of the most magnificent spikes ever exhibited. Notable among Single Reds were Prince Albert Victor, a splendid spike and intense in colour; Garibaldi, *La Joyeuse*, *Macaulay*, *Pelissier*, *Princess Clothilde*, *Cavaignac*, *Lina*, very fine; *Fabiola*, *Linnaeus*, *Gigantea*, *Solfaterre*, *Von Schiller*, *Ornement de la Nature*. Double Red—*Princess Louise*, *Lord Wellington*. Single Blue—*Prince Albert*, *Moltke*. Of the very dark class, *Baron Van Tuyl*, *Grand Lilas*, *Marie*, *Argus*, *Couronne de Celles*, *Lord Derby*, very fine both in spike and bells; *King of the Blues*, *Lothair*, *Lord Palmerston*. Double Blue—*Van Speyk*. Single Yellow—*Ida*. Single Lilac—*Charles Dickens*, *Sir H. Havelock*, and *Haydn*, very fine. Single White—*La Grandesse*, *Grandeur à Merveille*, *blush*, and *Queen of the Netherlands*. The second place was taken by Messrs. Cutbush,

of Highgate, who had fine examples of *G. Peabody*, *Grandeur à Merveille*, *Garibaldi*, *Queen of the Netherlands*, *Gigantea*, *Florence Nightingale*, *Macaulay*, *Queen Victoria*, *Grand Lilas*, &c. Third came Messrs. Carter & Co.

Class 2 was also for nurserymen, Messrs. Veitch and Messrs. Cutbush again exhibiting groups of the highest excellence. In Messrs. Veitch's collection, *Anna*, new single white, had an immense spike with fine bells. *L'Innocence*, *La Grandesse*, and *Grandeur à Merveille*, belonging to the same class, were also remarkably fine. Of Single Reds, *Vuurbaak*, *Fabiola*, *Lady Palmerston*, *Prince Albert Victor*, *Macaulay*; Single Lilac, *Haydn*, *Adelina Patti*; Single Blues, *King of the Blues*, *Marie*, *Czar Peter*, *General Havelock*; and Single Yellow, *Ida*, were all remarkable for the size and perfection of their spikes. Messrs. Cutbush's group contained *Von Schiller*, *General Havelock*, *Macaulay*, *Florence Nightingale*, *Blondin*, and excellent spikes of several others. Messrs. Veitch were first, Messrs. Cutbush second.

In the amateurs' class for twelve, Mr. J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, Ilford, was an excellent first with splendid spikes of *King of the Blues*, *Von Schiller*, *Czar Peter*, *Haydn*, *De Candolle*, *Lord Derby*, *Koh-i-Noor*, *Fabiola*, *Laurens Koster*, *Charles Dickens*, *Lord Macaulay*, and *La Grandesse*. Mr. Withall, gardener to A. Travers, Esq., Addison Road, and Mr. Weir, gardener to Mrs. Hodgson, Hampstead, had second prizes; and the third went to Mr. Collins, gardener to S. Cuming, Esq., Harbuton, Highgate. For six, the prizes went to Mr. Farrow, gardener to G. Batters, Esq., Brigadier Hill House, Enfield; Mr. Potts, gardener to Viscount Gage, Firl, Lewes; and Mrs. E. Wilding, 1, Chesterfield Street, Euston Road, the spikes being in each instance good, and a great improvement on those shown in the corresponding class in previous years.

Although the interest in a new Hyacinth is not equal to that in a new Rose, inasmuch as we cannot expect for years to see them within the reach of amateurs, yet there was considerable interest attached to those exhibited, inasmuch as in some there was evidently a march forward. *Anna* in Messrs. Veitch's six was a grand advance in colour, while we have had no flower like *Nonpareil* exhibited before, although why called violet we know not. It is clear that we are getting into a new and fine strain.

Messrs. Veitch & Sons' first-prize collection consisted of *Anna*, an enormous single white, bells fully 2½ inches across, a grand flower; *Grand Maître*, a very fine blue, light with broad distinct stripes in the centre of each petal; *Hermite*, single violet, small in truss, but novel in colour; *Nonpareil*, very novel in colour, called a single violet, but clearly more of a crimson with brownish shade in it, centre of each pip very bright; *Sir Garnet Wolseley*, single blue, dark with light centre, pips close together, but too small to be of any use; *Habit d'Été*, light lavender blue, fine spike.

Messrs. Cutbush who were second, had *L'Amore*, red, small spike; *Christine Henderson*, large spike, medium-size bells; *President Grant*, large, single blue, somewhat in the style of *Blondin*; *Quirine Christine*, very nice pink; *Grand Vizier*, a fine spike, bells perhaps a little too far apart, but splendid in colour.

Mr. Douglas was third with *King Coffee*, very dark, weak grower; *Prince Imperial*, purple; *Meteor*, very dark purple; *Sir Garnet Wolseley*, fine blue, more worthy of the name than the one in Messrs. Veitch's collection; *Cavaignac*, very large, light single blue, but the spike small and dumpy.

Tulips were not numerous, there being only two collections of twelve in the nurserymen's class, respectively from Messrs. Veitch and Messrs. Cutbush, who took prizes in the order named. Messrs. Veitch's, which were very fresh and fine, consisted of *Proserpine*, *Rouge Luisante*, *Vermillon Brillant*, *Wouverman*, *Keizer Kroon*, and *White Pottebakker*. In the amateurs' class the first and second prizes went to Mr. Douglas and Mr. Withall.

Crocuses came next in the schedule, the prizes offered being for fifty pots. Messrs. Veitch were first with grand masses of flowers. Among whites, *Theba*, *Mont Blanc*, and *Noblesse*, with *Miss Nightingale*, delicately striped, were remarkably fine; and of lilac, blue, and striped, *Sonera*, *Sir Walter Scott*, *Marquise de Wessenrode*, *Brunel*, *Lord of Albion*, and *Othello*. Messrs. Cutbush, who were second, had also a fine group in which *New Giant Yellow* reigned conspicuous.

Cyclamens made alone a splendid display, especially those shown by Mr. Goddard, gardener to H. Little, Esq., Cambridge Park, Twickenham, who took the first prizes in both the amateurs' classes—viz., in that for thirty and that for twelve pots. The varieties were, it is scarcely necessary to remark, such as did credit to the celebrated collection from which they came, exhibiting a profusion of bloom, combined with variety of colour and great substance. The second prizes in both classes went to Mr. James, gardener to W. F. Watson, Esq., Isleworth. A third prize for thirty was awarded to Mr. Odell, florist, Hillingdon. The only exhibitor in the nurserymen's class was Mr. Aldous, Gloucester Road, South Kensington, who had a first prize for well-bloomed pots.

The only six pots of Mignonette came from Mr. Barnes, gardener to A. Chancellor, Esq., The Retreat, Richmond; four of them were exceedingly well flowered, the other two poor.

Of Lily of the Valley Messrs. Standish & Co., of Ascot, sent very fine pots, as did Mr. Aldous, and Mr. Douglas, who also found a place in the prize list.

Of Chinese Primulas only two collections were shown. That from Mr. James, of Isleworth, which was first, contained Princess Louise, a very fine white. The second prize was withheld, and the third went to Mr. Farrow.

The Orchids, as usual, lent no inconsiderable charm to the exhibition. In the amateurs' class for six Mr. Denning, gardener to Lord Lonsborough, Norbiton, was first with a really magnificent *Cymbidium eburneum* which had thirteen flowers, a form of *Cologne cristata* with a pale lemon lip, and *Odontoglossum Andersoni* with a handsome branched spike. The second prize went to Mr. G. Wheeler, gardener to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park. For six Orchids (nurserymen), Mr. B. S. Williams, of Upper Holloway, came in first. He had *Dendrobium Wardianum*, one of the finest of *Dendrobies*, *Renanthera coccinea*, *Phalenopsis grandiflora*, *Vanda suavis*, &c. Mr. W. Bull was second; in his collection was a splendid specimen of *Masdevallia Lindenii* with seven flowers open.

In the class for six *Amaryllis*, distinct, Messrs. Veitch were the only exhibitors, and were awarded the first prize. A. Leopoldii, Ackermannii pulcherrima Alphonse Karr and A. Orpheus were the most noticeable.

The only group of hardy spring flowers in pots came from Mr. R. Parker, of Tooting, who had among others *Scilla sibirica* and *Iris reticulata* in great beauty. A first prize was awarded, as likewise to Messrs. Lane, of Berkhamstead, who had the only group of Ives, but one which well deserved that recognition.

Among miscellaneous subjects, the exhibition of which was large and unusually good, Messrs. Veitch sent a very fine bank of Orchids, for which they received an extra prize. *Angræcum sesquipedale* had two handsome spikes with four flowers on each. *Dendrobium Wardianum* had two spikes, one with fourteen and the other with eight flowers. Extra prizes were also awarded to the following exhibitors—viz., to Mr. Williams, of Holloway, for a group of Orchids, Palms, Ferns, Cyclamens, *Toxicophloeæ spectabilis*, and a variety of flowering plants. To Mr. Bull for a mixed group of Palms, *Dracenas*, and other ornamental-foliaged plants, *Anthurium Scherzerianum*, &c. To Mr. Denning, gardener to Lord Lonsborough, Norbiton, for a group of Orchids, in which *Oncidium serratum*, *Masdevallia Lindenii*, and *Lycastes* were of high merit. To Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park; to Mr. Aldous, Gloucester Road, South Kensington; to Messrs. Standish, Royal Nurseries, Ascot; and to Messrs. Rollison, of Tooting, all of whom had mixed groups, into which *Azaleas*, fine-foliaged plants, and *Cinerarias* entered largely. To Messrs. Veitch for a noble collection of Hyacinths, as also one of Tulips, likewise a fine group of Cyclamens, the same firm contributing, besides, an excellent collection of *Narcissus*. To Mr. W. Paul, of Waltham Cross, for a splendid collection of 120 Hyacinths, which well maintained his fame, though no longer exhibiting for prizes. From the same exhibitor came also several stands of beautiful cut Roses and Camellias, the perfection of freshness and beauty. A nice little group of *Deutzia gracilis*, remarkably well flowered, secured an extra prize for Mr. Reeves, nurseryman, Acton.

Of Fruit, more especially Apples and Pears, there was a large and very fine display, no less than sixty dishes of dessert Apples being shown in one class alone.

Prizes offered for the best and second best two bunches of late Black Grapes went to Lady Downe's from Mr. Wildsmith, gardener to Viscount Eversley, Heckfield, and Mr. Cole, gardener to J. S. Budgett, Esq., Ealing Park. Those from Mr. Wildsmith were the better preserved of the two, while Mr. Cole's bunches were the larger; both, however, in all respects were wonderfully good. Mr. Temple, gardener to the Duke of Marlborough, Blenheim, sent *Alicante* in fine preservation, but slightly shrivelled; Mr. Bannerman, gardener to Lord Bagot, Blithfield, Rugeley, Lady Downe's and *Alicante* still plump; Mr. Douglas, Loxford, Lady Downe's, very large, but beginning to go; and Mr. Kemp, gardener to the Duke of Northumberland, Albury Park, Guildford, plump bunches which had been kept eleven weeks. No late White Grapes were shown.

For the best three dishes of Dessert Apples Mr. C. Ross, gardener to C. Eyre, Esq., Welford Park, took the first place with beautiful samples, both in colour and keeping, of Cox's Orange Pippin, Scarlet Nonpareil, and Cornish Aromatic. Scarcely less fresh and handsome were those which took the second prize, and which came from Mr. Jones, gardener to Her Majesty at Frogmore, and consisting of Cox's Orange Pippin, Blenheim Pippin, and Claygate Pearmain. Several other exhibitors sent fine dishes, notably Messrs. Clark, Miles, Record, Parsons, and James.

Of Kitchen Apples eleven collections were staged. Mr. Parsons

gardener to R. Attenborough, Esq., Fairlawn, Acton Green, was first with very fine specimens of Blenheim Pippin, Dumelow's Seedling, under its market name of Wellington, which it appears cannot be "stamped out," and Alfriston. Second came Mr. Gardiner, gardener to E. P. Shirley, Esq., Lower Ealington Park, Stratford-on-Avon, with Blenheim Pippin, Yorkshire Greening, and Gloria Mundi.

The competition for three dishes of Dessert Pears was limited to Mr. Jones and Mr. Ross. The former was first with Beurré de Rance, Chaumontel, and Shobden Court; the latter second with Passe Colmar, Ne Plus Meuris, and Beurré de Rance. For three Kitchen Pears Mr. Ross was first with fine specimens of Uvedale's St. Germain and Catillac, the other kind being Beurré de Rance.

Mr. Jones, gardener to Her Majesty at Frogmore, had an extra prize for a large Smooth-leaved Cayenne Pine Apple. He also sent a collection of Apples consisting of the following sorts in fine condition—Frogmore Golden Pippin, Caraway Russet, Scarlet Golden Pippin, Cockle Pippin, King of the Pippins, Golden Harvey, Victoria, Rosemary Russet, New Rock Pippin, Holly Grove, Court Pendu Plat, Lord Raglan, Ribston Pippin, Windsor Castle, Seedling Golden Pippin, Syke House Russet, Fearn's Pippin, Newton Pippin, Frogmore Nonpareil, Late-keeping Seedling, Old Nonpareil, Cox's Orange, Claygate Pearmain, Dutch Mignonne, Adam's Pearmain, Gipsy King, Blenheim, and Braddick's Nonpareil. Mr. Ford, gardener to W. E. Hubbard, Esq., had also a splendid collection of sixty-five kinds, and Mr. Ross one of Dessert Apples and Kitchen Pears.

In the Vegetable Department prizes were offered for fifty heads of Asparaguses. There was no competition. Mr. James, of Isleworth, took first with large sticks. For Sea-kale, Mr. Clarke, gardener to J. R. Hall, Esq., Sutton, was first, Mr. Deuxberry, gardener to Earl Darnley, Cobham Hall, Gravesend, second. For Mushrooms, twenty-four from Mr. Record, Vinters Park, Maidstone, out-distanced all competitors; Mr. Gilbert, gardener to the Marquis of Exeter, Burghley, was, however, an excellent second; and Mr. Temple, of Blenheim, and Mr. Clarke sent fine baskets. For Broccoli, Mr. Cooling, of Bath, was first with Matchless, Mr. Clarke second with Snow's Winter White, and Mr. Ross third with Veitch's Spring White. By far the best brace of Cucumbers was Tender and True from Mr. Douglas, of Loxford. These were 22 inches long, and, as far as could be judged from outward appearance, seemed likely to justify their name, being the handsome brace of Cucumbers that could well be shown at this season. The variety has already had its merit marked by the award of a first-class certificate. Mr. Dean and Mr. Stapleton were second and third with White-spined sorts.

FRUIT COMMITTEE.—Alfred Smeë, Esq., F.R.S., in the chair. Messrs. Monro & Wilkinson, Potter's Bar, sent fruit of Duke of Edinburgh Cucumber, with a branch showing its great prolificacy. This excellent Cucumber has already received a first-class certificate, and those exhibited confirmed the opinion of the Committee. Mr. W. Esley, The Gardens, Valentines, exhibited two dishes of Mushrooms. Mr. Geo. Fairbairn, gardener to W. Terry, Esq., Peterboro' House, Fulham, sent fine specimens of home-grown Vanilla, to which a cultural certificate was awarded. Mr. Parker, of Woodstock, sent fruit of Blenheim Pippin from supposed original trees growing at Woodstock. Mr. Ross, gardener to C. Eyre, Esq., Welford Park, Newbury, sent a dish of Pitmaston Russet Apple. Mr. F. Barnard, Bridgeway Nursery, Godalming, sent a dish of Druett's Seedling Apple, which was not considered of any merit. Mr. J. Douglas, Loxford Hall, Essex, sent a bunch of Lady Downe's Seedling which had been kept in water since January. Mr. Stephenson, gardener to T. C. Barber, Esq., Lee House, Essex, sent a collection of fruit, consisting of Verulam, Uvedale's St. Germain, Joséphine de Malines, Glon Morcean, Jean de Witte, Beurré Bretonneau, Beurré Duhaume Pears, Scarlet Nonpareil, Cox's Orange Pippin, and Blenheim Pippin Apples.

FLORAL COMMITTEE.—R. B. Postans, Esq., in the chair. Messrs. Veitch, Chelsea, received first-class certificates for the following:—*Cypripedium Argus*, a species allied to *C. barbatum*; the sepals are densely spotted, and the footstalks much longer than in any of the forms of *barbatum*; *Cattleya Veitchiana*, a hybrid between *C. labiata* and *C. crispata*—the flowers are larger than those of *crispata*, but it has the highly coloured and fringed lip of that species, and the lilac sepals and petals of *C. labiata*. *Narcissus Tazetta orientalis* fl.-pl., a double form of *Polyanthus Narcissus*, it will be very useful for button-hole and other bouquets of a similar character; Hyacinth Cavaignac, porcelain blue, the bells of excellent shape, large in size, and closely set on the spike; Hyacinth Sir Samuel Plimsoll, single, creamy blush, large bells, and handsome spike; and Anna, very fine white. *Chysis Chelsoni*, a beautiful hybrid between *C. Limminghii* and *C. bracteata*, also received a first-class certificate. The lip is red, very slightly suffused with purple instead of the beautiful purplish violet lip of *C. Limminghii*. The same firm also showed Tea Rose Duchess of Edinburgh. This

is a distinct Rose, and will, when shown later in the season, be more appreciated. The colour is clear rose, and the flowers full and nicely cupped. Mr. Bennet, Stapleford, had a first-class certificate for Hybrid Perpetual Rose Madame Lacharme, white bluish centre; and Tea Madame François Janin, coppery orange, had a similar award. Messrs. Veitch, Cutbush, and Douglas also exhibited new Hyacinths, which have been already noticed in a previous part of this report; also Mr. W. Paul.

### NOTES AND GLEANINGS.

**HEPATICA ANGULOSA.**—It may not be generally known that there are two varieties of *Hepatica angulosa*, one very much larger than the other. We lately saw both varieties in the garden of Mr. G. F. Wilson, at Heatherbank, Weybridge Heath, and the flowers of the larger variety measured  $1\frac{1}{2}$  inch in width.

**MRS. PINCE'S MUSCAT GRAPE.**—We recently received a portion of a bunch of Mrs. Pince's Muscat Grapes from Mr. Abram Bass, of Burton-on-Trent, which at this late season were in admirable preservation, and though very slightly shrivelled were quite fleshy. The flavour was very rich, and more like a fresh raisin than anything else. Though the colour was not quite black, the fruit itself was as finely flavoured as could be desired. It appears that the soil in which the Vine was grown is admirably suited to this variety.

**OUR cultivated plants survive much farther to the north than is usually supposed.** M. Adolph Erman, when only eighty-four miles from the Arctic Circle in North Siberia, found not only woods of Larch, Pine, and Birch, fine and vigorous, but garden vegetables such as Turnips of large size, and in the woods Blackberries and Roses—probably, says M. Erman, *Rosa calyciflora* of Gmelin—growing luxuriantly.

**WE have received from Messrs. Huber & Co., of Hyères, a coloured plate of DAHLIA ARBOREA, a species quite distinct from Dahlia imperialis.** It is of a lilac colour, and the form of the flower is like that of the old Waratah Camellia. In a circular issued by Messrs. Huber they say—"It attains the height of about 7 feet, and it forms a well-branched clump with large leaves of a dark green, which contrast agreeably with the foliage of other plants. This inferiority of height makes it take up less room in the conservatory than the *D. imperialis*, and enables it to resist the wind better in the open air. From the end of December it produces an innumerable quantity of well-formed mauve-coloured flowers, the successive development of which does not suffer from a temperature below freezing point. The form of the plant is, moreover, quite new in the genus, for it can only be compared to a gigantic Anemone; and its peculiarity of flowering copiously at a low temperature is a rare occurrence among succulent herbaceous plants."

**A FIRM in Hiogo, Japan, exported 600 tons of Wheat in November direct to the London markets, and intend to export more if the speculation is successful.**

**GRAND MIDLAND COUNTIES HORTICULTURAL EXHIBITION.**—We are pleased to announce that H.R.H. Prince Arthur has communicated his intention to become one of the patrons of this important Show to be held at Birmingham in July.

**A NEW work, entitled "Orchids and How to Grow Them in India and other Tropical Countries," is commenced publishing by Messrs. L. Reeve & Co.** The author is Mr. S. Jennings, F.L.S., &c., late Vice-President of the Agri-Horticultural Society of India. We have only seen the first number, in which the plates are the natural size of the flowers and well coloured.

**A PAINTING of a fine bunch of the DUKE OF BUCCLEUCH GRAPE, which has been much admired in the Exhibition of the Royal Scottish Academy this season in Edinburgh, was purchased last week for seven guineas, by the Royal Association for the Promotion of Fine Arts.** The representation is a very faithful one, and was executed by Miss Thomas, Lasswade, from a bunch supplied her from Clovenfords.

**THE COLORADO POTATO BEETLE.**—The reports of the ravages made among the Potato crops in the United States last year by the Colorado beetle have naturally caused considerable alarm to growers in this country, as it is feared that this insect pest may be brought over in the large quantities of seed Potatoes which are imported from the other side of the Atlantic. With a view to preventing its introduction, Mr. J. Algernon Clarke, Secretary of the Central Chamber of Agriculture, on the 10th

of February addressed a letter to Mr. Gladstone, calling his attention to the imminent risk to which the United Kingdom, especially Ireland, is exposed, and suggesting that the importation of Potatoes from the United States and British America should at once be prohibited. In reply, a letter was received last week from the office of the Privy Council for Trade, to the effect that, according to the American official reports, it does not appear that the eggs or larvae of the Colorado beetle have been or are deposited or conveyed in the tuber of the Potato, and therefore there is considered to be no reason to prevent the importation of seed Potatoes from America into the United Kingdom until the case is proved to be otherwise.—(*Times*.)

### THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 17.

SUPPOSING that one were to put the question to an entomologist or a general observer of Nature, "What species of insects display activity most notably in the early months of spring?" we should probably be answered that bees, wasps, and certain individuals of the Hymenopterous race are first seen abroad on the wing. But the query admits of a variety of answers, according as it is understood as applying to insects of the air or those of humbler habit, and also much depends upon the locality brought under observation. In point of numbers, and taking an average season, I should say that flies make the most conspicuous appearance at the dawn of the vernal season, understanding the word "flies" in its broad sense, as including not only two-winged or Dipterous insects, but also others, four-winged, yet in size and general outline resembling the true flies, and hence commonly classed with them. Besides the numerous hosts of gnats and midges, whose occasional displays on the wing during the brief hours of a mild winter's day serve to link together the insect life of autumn and spring, we find, as at this moment I am writing, that in the first open weather in February or March parties of other flies come forth which have not, for the most part, hibernated as flies, but have just emerged from the pupal condition. I was amused a day or two since at the conduct of some individuals that had evidently only come forth to the world of outer life an hour or two before I saw them. They were dispersed over an old wall, their black bodies and transparent wings showing up plainly enough on the grey lichens, diminutive as they were; but what was most singular was their being dotted over the wall at intervals, almost as if they had marked out their distances from each other. Yet they had not, in all probability, emerged from any crannies in the wall, only they had selected the spot as a convenient one for their repose until their time of flight arrived.

These, I suspect, belonged to the host of flies that are feeders in the larval state on dung or refuse. Many, however, of the flies now coming out are more active friends to the garden, being destroyers of caterpillar life, especially those four-winged flies belonging to the large Ichneumonideous division. There are at least 1200 species of these, and, almost without exception, the larvae are parasitic on other insects, and serve, as we rather vaguely say, to preserve Nature's balance, and prevent any one species becoming excessively numerous. To watch the diligent and as ceaseless way in which the mothers of the Ichneumon race, running over leaf, stem, and flower in pursuit of caterpillars more particularly, might almost lead one to think that their indefatigable labours would at last "stamp out" some species. But we have no reason to suppose such a result ensues, or very rarely indeed; for if a species of Ichneumon was as numerous in any one generation as the caterpillar it attacked, since each fly is the parent not of only one, but of many, the parasitic species would ere long over-ride the other. Besides accidental influences, however, which may destroy the fly and spare the larger species, it is noticeable that scarcely a parasite is there which has not its parasite in turn; and though this sort of thing may not go on *ad infinitum*, as the hackneyed phrase has it, we can trace the prevalence of a law of mutual check as far as our eyes and microscopes will carry us. And again, it is true that while it has been found that a certain moth or butterfly will have its special enemy confined to that species, others among the Ichneumons attack a variety of caterpillars, and so divide their power. Some caterpillars there are which seem almost to go scot-free and escape parasitic pests, and some, again, are terribly exposed to attack, as, for instance, the moths known as the "Prominents," where unstung caterpillars are seldom found at large by the entomologist, and

owing to this many of the species are rare. Hairy caterpillars do not always find their coating a protection; those of the "Tigers" and the "Daggers" (*Arctia* and *Acronycta*) die-off through the attacks of these parasites, the long ovipositor of the females enabling them to reach and even to puncture the skin of the larva.

There is something so striking about the "cut" of an Ichneumon fly, that if we have once seen one and well examined it we never fail to recognise these insects thereafter. Their form, it has been well said, combines lightness and strength. The wings are usually of good size, with clearly marked veins; the head is small, and has a mobile look about it; the abdomen, nearly always long and slender, is attached only by a small thread to the end of the thorax, and provided with an ovipositor, sometimes retractile, and at others extending to a greater length than that of the abdomen—adapted, in fact, to the habits of the species, for some of the Ichneumons manage to deposit their eggs by the help of the long ovipositor upon hapless insects they have never seen, such as the larva of the Tortrix moth in his leafy investiture, the snug tenant of the gall, or, perhaps, the grub of a beetle hidden away in decayed wood. What is, perhaps, more singular than all is that one or two Ichneumon flies actually skim the water of pools and streams, and seize an opportunity to puncture the bodies of aquatic larvæ or pupæ.



Species of Ophion.\*

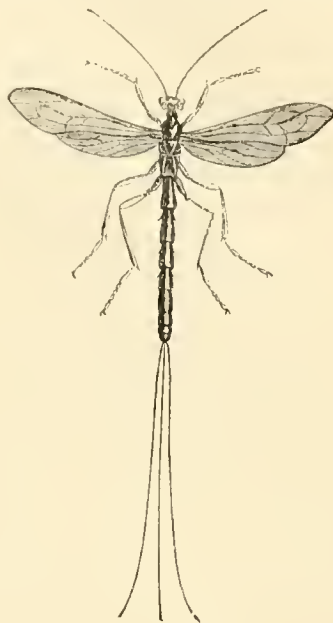
Though in popular phrase we speak of caterpillars as "stung" that have fallen victims to the Ichneumons, they inflict no wounds that are poisonous; the only object of their punctures is the deposition of eggs. But several species simply deposit their eggs on the skin of the caterpillar, and therefore the females are not in that case armed with a piercer or with lancets as are the Pimplas. Flies of the genus *Ophion*, such as the well-known species (*Ophion Vinulæ*?) that attacks the caterpillars of the Puss Moth, secure the eggs to the skin by such an adhesive fluid that they cannot be pulled off the caterpillar without wounding it. The experiment has, however, been tried successfully of carefully nipping the eggs, and so destroying the germ of life within. Kirby observed some of these eggs stood upon the backs of larvæ by short foot-stalks. It is rather extraordinary that when these parasites are feeding externally, as often happens with the Ophions, they manage to retain their position in spite of the moulting of the caterpillar, and their period of maturity generally agrees with that of their living food. When the caterpillar has made its cocoon, or occasionally before, its enemies quit their hold and form their own cocoons.

The Yellow Ophion (*O. luteum*), is a spring and summer species, and it is exceedingly partial to artificial light, entering rooms in the evening, when it looks much larger than it really is, as seen reflected against the ceiling, and its aspect leads persons to suppose that it is a "vicious" insect. Really it is useful to the horticulturist, nor should specimens of it be needlessly killed. The claws of this fly seen by a moderate magnifying power have a pretty appearance. A few of the Ophions have a short sickle-like angler, by means of which they cut a place for the egg they deposit. The males of these species resort to flowers, but they are less frequently seen than their consorts.

Prof. Westwood has described, with his usual accuracy, the proceedings of a species of *Pimpla* engaged in the pursuit of larvæ encased in wood. The insect had seemingly made several cautious insertions of its ovipositor until it succeeded in hitting upon the exact spot. Only the central borer was thrust into the wood, the outer portions being curved, and pressed against the wood as if to give the power of a lever. The abdomen was also worked backwards and forwards at intervals, giving a

"bradawl kind of motion." Another entomologist tells us that he saw a *Pimpla* plunge all its lancets into the object it was attacking. Some of these long-tailed Ichneumons have been discovered with the ovipositor so far entangled that they have been unable to get free and have died in their struggles. There is a species of *Ophion* which has a fancy for variety in its food, and hunts up the larvæ of a *Pimpla* which has previously attacked the nest of a wild bee. Thus we have a parasite upon a parasite.

*Rhyssa persuasoria* is a useful insect in plantations, as it seeks out the larvæ of *Sirex*, usually of *S. juvenis*, which is in some seasons more than sufficiently plentiful, and injurious to several species of Fir, in the wood of which the larva drives long tunnels. This fly is another of the three-tailed Ichneumons, and it may be seen traversing the bark of a tree, and ascertaining by the antennæ where the larva is hidden, in



Species of Pimpla.\*

which it seeks to deposit eggs. It is a moot point how the antennæ of the insect help it to discover the object. Whether the touch, or the sense of smell or hearing conveys the impression we cannot say, but it is promptly acted on. This is one of the few instances where the parasite is as large or larger than the animal attacked, thus interrupting the harmony of gradation. Here we have a beetle larva falling a prey to Ichneumons, and we shall ere long possibly discover many examples of a similar kind. At present the Ichneumonidæ are best known to us as the occasional foes of others of their own order, and the constant enemies of caterpillars of all proportions, from the giant Death's-head down to the tiny silvery leaf-miner.—J. R. S. C.

## GRAPE VINE CULTURE FOR SMALL GARDENS

No. 2.

WHEN the soil is not sufficiently fertile for the Vines it may almost always be made so by mixing with it some old manure that is thoroughly rotten, and some gritty matter, such as road-scrappings, mortar rubbish, broken bricks, or, in fact, any hard materials that are brought to a tolerable degree of fineness, in order to prevent the border from settling down into a close sodden mass. The proportions should be two parts of soil, one of manure, and one of grit, more or less according to the actual condition of the soil. A little charcoal broken to the size of nuts may be added with advantage. This simple mixture should, if possible, be made a few months before it is required, thrown up in a heap or long ridge, and turned frequently whenever it is dry enough, so as to render it thoroughly sweet and mellow by the action of the air. Especial care must be taken neither to stir it or take it to the vineyard while it is very

\* From Figuier's "Insect World."

wet, or it will be spoiled. When the soil parts freely from the fork, and can easily be scattered, then is the time for mixing or removal.

The importance of this operation is very great. If well done it may justly be regarded as the first step towards success; but if badly, the most skilful and painstaking culture will be unavailing to produce good Grapes. A quantity of rich manure stirred into the soil at the time of planting will undoubtedly cause the Vines to grow with extraordinary vigour, but if the roots are examined in the following autumn they will be found to be fat-looking, white, juicy, soft, and containing very little fibre. In the ensuing spring the Vines may start into growth tolerably well, yet when the foliage begins to expand, or soon after, signs of failure will inevitably appear; the growth ceases, flags, becomes of a pale sickly colour, and no further progress is made till late in the season, after the formation of some fresh roots, the whole of the gross unripe roots having perished in the preceding winter. Besides causing this wasted, and therefore useless vigour, a mass of rich manure applied to the roots in a crude unmixed state is extremely liable to bring mildew upon the Vines in its very worst form, and therefore, if the soil appears to require manure, it must be applied in the first instance in the way I have described; then the young roots that are formed in it will be small, firm in texture, very fibrous, and of a brown ripened appearance, which is precisely the condition that is necessary to enable them to pass through the inclemencies of winter in safety.

In selecting the Vines choose those having stout, brown-looking, firm canes of a uniform circumference of not less than an inch, discarding any that are of a slender attenuated appearance. The glowing accounts which have from time to time been set forth of the numerous new kinds of Grapes are apt to render the selection of sorts a puzzling matter, and to induce beginners to venture upon the purchase of some that are unsuitable for their purpose, from the prevalent and certainly very natural wish to grow the best kinds. For those who only require a supply of really good Grapes of easy culture irrespective of varieties, I would plant principally with Frankenthal, the best of the Black Hamburgh class, adding a Buckland Sweetwater if a few white bunches were required. But when a selection is cared for, such as will impart greater interest to the culture as well as afford a pleasing variety in the form, colour, flavour, and duration of the fruit, to those two excellent Grapes I would add Royal Ascot, a very prolific sort, somewhat small in bunch, but with very large, round, highly coloured black fruit; and for the warmest part of the house a Madresfield Court Black Muscat, a somewhat delicate but most delicious Grape, side by side with which the king of white Grapes, Muscat of Alexandria, should find a place. The delicious little early white Grape, Ferdinand de Lesseps, too, is very worthy of having one representative in such a viney. Its bunches are not large, but it is so robust and prolific that a heavy crop of fruit may always be taken.

The planting may safely be done in March or April, but it is best to plant before the young shoots appear, so as to avoid all risk of breakage. In doing this shake all the soil off the roots, spreading them out evenly and at full length upon the surface of the border, and covering with 6 inches of fresh soil. Three feet apart is a good distance for the Vines. As the season advances examine the roots and interior border frequently, giving water abundantly whenever it appears necessary. If the Vines are all right as to condition and strength, one rod only should be allowed to start from the bottom of the trellis, letting it ramble as far as possible, and only checking fresh growth by pinching as autumn approaches, in order that both wood-growth and roots may be thoroughly ripened and matured before winter. If, however, the Vines are weak, then every shoot should be encouraged to grow so as to promote vigorous root-action; and although the thick and tangled growth may present a useless purposeless appearance it is not so in reality, for by it the system of the Vines will be so much invigorated that in the next season a splendid cane may very confidently be expected to replace the wild growth which is almost all pruned away in autumn.—EDWARD LUCKHURST.

"curious" but useful houses. Other constructions may be less costly, but these, with iron gutters, &c., as now supplied, are more durable, and claim to stand quite as well as the most expensive wood-and-glass houses.—HEREMAN & MORTON.

#### NOTES FROM MY GARDEN, 1873.—No. 5.

##### AURICULAS.

I HAVE so often written on the subject of this, one of my earliest loves, that I fear, like many a poor fellow who is especially spoony, and bores his friends with gloomy eulogies on the eyes and hair, the charming manner and elegant figure of his *inamorata*, until they wish him and her irrevocably tied, when, cynics do say, he will begin to find out that he was a little bit mistaken; so my disquisitions upon the charms of this perhaps my favourite florists' flower may prove irksome to the general readers of the Journal, but I am sure not so to the real florist, who is not tired of hearing how his pets thrive in other hands than his own; and so, although I have nothing particularly fresh to notice, I shall yet say how they thrive with me in 1873.

I find that there is no flower of which we can determine so little the character of the future bloom as the Auricula, both as to time of flowering and quality. Thus, this has been a peculiarly mild winter, and in the early autumn I should have said that we should have had a very early bloom. My plants were top-dressed earlier than usual, and I should have in January safely affirmed that they would have been at their full bloom by the middle of April. Now, I am afraid I shall have none in, and from what I hear from many quarters it is the same with other growers. But I am not writing about this year's prospects, but about last year's doings. However, it is not irrelevant, for the same thing took place last year. The winter, although not so mild as the present one, was yet mild, and equally then did I anticipate an early bloom; but by the time the April Show at the Royal Horticultural Society took place it was with the greatest difficulty I could get six in flower; and even Mr. Charles Turner with his immense collection was so hard pushed that he had to put in a yellow self (Gorton's Stadtholder) to make up his twelve. And let it be remembered that one cannot do with the Auricula as with most other florists' flowers; you cannot force it. If your Hyacinths are late you can push them on; if Carnations are late you can bring them, if in pots, into the house; you can put glass over your Dahlias, or forward your Gladioli by enclosing them; but the Auricula will not stand it—nay, more, I do not believe that you can advance it by so doing. I recollect some years ago a wiseacre, who knew as much about the Auricula as I do of Sanscrit, when I complained that the day fixed for a show was too early, said I had yet to learn some of the first elements of the art of growing flowers, and that if they were not ready I should make them be so. I should like very much to have set him to grow a frame of Auriculas.

I am more than ever confirmed in my opinion that a great deal too much fuss has been made about the difficulty of growing them, and that a few simple facts borne in mind will enable anyone to grow them successfully; and at the risk of repeating myself I will enumerate what these facts are, for I hope to see the number of those who admire this beautiful flower increasing. Some have, I know, recently undertaken its culture, and I hope many more will follow. First, the Auricula is very impatient of damp, and therefore not only an airy situation but an airy frame should be chosen for it, with ventilators that you can open when it is dangerous to lift the sash. I never allow rain to fall on my plants, and as a consequence the beautiful white foliage of some sorts does not get splashed, nor does water lodge in the heart of the plants. Although I would not unnecessarily expose them to frost, yet frost is not so injurious to them as damp. Secondly, they like good but simple compost. When one reads through the nostrums recommended by some of the old growers I am not surprised that they were for ever dilating on the difficulty of growing them. I believe that a simple compost of good loam and cow dung in the proportion of two-thirds of the former to one-third of the latter, and a little sharp sand, is about all that is required. They will root well in this, and then in the beginning of February the soil should be removed to the depth of an inch or more, and the pot filled-in with well-decomposed sheep manure. Thirdly, they require—absolutely require—to be in a northern aspect in the summer. Old Mr. Lightbody used to keep his in that position summer and winter. I have also done so more than once, but on the whole I rather prefer

\* PAXTON VINERIES.—Mr. Luckhurst's experience (see p. 215 in our Journal of the 12th inst.), in growing Grapes in Paxton's glass houses is that of every intelligent gardener who has adopted them, whether with pot Vines or Vines in permanent and properly prepared borders. We have many instances of this, and receive many proofs of the durability of these

placing them in a southern aspect in winter—in fact, I simply turn my frames round.

I think that with these things attended to, and care in watering and keeping the pots and plants clean, anyone may grow Auriculas; and I am sure this is not more trouble than is connected with any florists' flower. Last year I had three frames of plants large and small; this year my stock has been increased by the accession of some of my dear brother's plants and from other sources to five frames, and to about five hundred plants large and small. On the whole, I cannot say my general bloom last season was as good as I have had it. That good old florist Mr. Butcher, of Camberwell, when looking at my plants in 1872 said, "Sir, if you grow Auriculas for twenty years you will never have such plants again." I am inclined to think that he was not far from the truth. I had some fine plants in for the show in May, and some extraordinary blooms, particularly one truss of *Ne plus Ultra*. It had five pips, and I laid a crown-piece on every one of them, and the edge of the flower came beyond it—not that this was any advantage: the refinement of the flower was gone; it was coarse, and I would not on any account have exhibited it. George Lightbody maintained the high opinion I have always entertained of it, and gave me some fine blooms. Some seedlings were submitted to me, and of these I may say something by-and-by; but they were not in my garden, and so have no place in these notes. I had nothing new to bloom, and contented myself with the old favourites. The summer was cool, and favourable for the well-being of the plants. I had but very few summer losses, and my plants when housed for the winter looked very well; and although the growth has not been so great as in some seasons, yet I never had a healthier-looking collection of plants. The following varieties maintained the good opinion I have already formed of them.

#### GREEN EDGES.

Trail's Mayflower	Litten's Imperator
Hudson's Apollo	Dickson's Duke of Cambridge
Trail's General Neill	

#### GREY EDGES.

Headly's George Lightbody	Chapman's Maria
Lightbody's Richard Headly	Maclean's Unique
Waterhouse's Conqueror	Cunningham's John Waterston

#### WHITE EDGES.

Pott's Regulator	Heap's Smiling Beauty
Campbell's Robert Burns	Macdonald's Incomparable

#### SELFS.

Spalding's Metropolitan	Lightbody's Lord Clyde
Campbell's Pizarro	Netherwood's Othello

—D., Deal.

### SYDNOPE HALL.

[The following interesting notes arrived at our office too late for inclusion in our commentary last week.]

There are no historical incidents connected with Sydnope House, which was but a small, comfortable, residence until enlarged by its late owner, Sir Francis Sacheverell Darwin, M.D. These enlargements were carried out in 1826, and at the same time the surrounding grounds, full of natural beauties and attractions, were greatly improved and judiciously laid out. Sir Francis also, in addition to other features, added to its attractions by the forming of fountains, alcoves, and grottoes in various parts.

In the immediate neighbourhood, on the Sydnope brook, many years ago Messrs. Daykeyne established flax mills of remarkable construction, for the hydraulic machinery of which they took out a patent. "The machine called the 'Equalinum,' now in general use (1833) for the spinning of flax, was also invented by the same gentlemen in their minority, for which, in 1794, a patent was granted to their father Daniel Daykeyne, sen., of Darley Dale, Esq., 'for a machine for the purpose of preparing and spinning of flax, denominated the Equalinum.'" This machine became afterwards commonly known as the "gill machinery." The lakes or reservoirs for these works formed a very picturesque feature in the landscape.

In the grounds attached to Sydnope House, and in a part called "The Rough," a breed of wild boars were for many years kept, and roamed about undisturbed in all the wild fierceness of their nature—one being occasionally hunted, or otherwise killed, and eaten, the "boar's head" gracing the board in true mediæval style. In 1837 the herd had become reduced to a single boar—the last of his race—a fine noble-looking and venerable animal, with tusks of enormous size.

This, the last of the wild pigs—*ultimus Romanorum*—had been caught and kept some weeks in a sty in the farmyard for fattening. Sir Francis Darwin determined that as "Jack," as the boar was named, had been born and bred in "The Rough," and was the last of his noble race, he should die as he had lived, in his primitive wildness. A "boar hunt" was therefore determined upon, and, the boar having previously been turned out into his native "Rough," a cavalcade, à la *Wouvermans*, was formed, and accompanied by a number of dogs and a large number of persons on foot, descended into the valley. This cavalcade and the whole event were graphically described in a poem, which we quote:—

"A goodly sight it was to see  
That morn the gallant company,  
That blithe and eager for the sport,  
Were gathered in the stable court.  
Sir Francis rode a coal black steed,  
Of mettle high, and noble breed;  
Of velveten the coat he wore,  
His dexter hand a pistol bore,  
And at his side, from girle slung,  
A hunter's carved cutlass hung.  
His daughter fair a palfrey graced,  
In lady's amble deftly paced;  
Obedient to his gentle lead  
Though fiery still, his neck he bowed.  
Two squires attended on the knight,  
Arm'd duly for the sylvan fight  
With carabines, whose deadly aim  
Might well at distance strike the game;  
And each was mounted on a steed  
As fit to serve his lord in need.  
"Of small folk, too, a various herd  
Awaited all their master's word;  
Some, dogs in hempen leashes lead,  
Of old and noble English breed,  
Of tawny coat and sinewy limb,  
And, angered, sure of aspect grim;  
And one prepares a horse and gear  
The slaughtered wild boar home to bear;  
And others idly mingle there,  
In hope the day's sport to share.  
And pointers, spaniels, smooth and rough,  
Black, brown, and white, and weak, and tough,  
All yelp'd in discord there."

The hunting party soon found the boar, but he having been kept in a sty for some time, and grown fat and effeminate, gave but little sport, and was ignobly shot while squatting on his haunches at the foot of a tree where he had turned to keep the dogs at bay. His body, as a trophy, was carried back in triumph to Sydnope House.

Sir Francis Sacheverell Darwin, the former owner of Sydnope House, was the second son of the celebrated Dr. Erasmus Darwin, the author of "The Botanic Garden," "Zoonomia," "Loves of the Plants," and other works of a like philosophical character, by his second wife Elizabeth, widow of Colonel E. S. Pole, of Radbourne Hall, and half brother of Dr. Darwin, of Shrewsbury, to which family Darwin, the author of "Origin of Species," belongs. The family was originally of Cleatham, in Lincolnshire. Dr. Erasmus Darwin resided at Derby and Lichfield, and became the possessor of Breadsall Priory, in that county, on the death of his son Erasmus, by whom it had been purchased. This passed to Sir Francis Darwin, who ultimately removed thither from Sydnope House.

### THE WEATHER NEAR MAIDSTONE.

At Vinters Park the weather has lately been very severe for three or four days. On Tuesday morning (March 10th) the thermometer registered 7° of frost, on Wednesday morning 13°, and on Thursday 11°. The frost has been accompanied with a considerable fall of snow on two days, but to-day, Friday, it has entirely disappeared and the frost with it.

The mild weather previous to the frost brought Apricots, Peaches, and Nectarines into bloom. The former were full out; and although the trees have been protected by the best means at command, most of the blossoms are destroyed. I find eight out of ten so injured and the embryo fruit has turned black, so that all hopes of saving them are over. The remaining few, if they henceforth go on uninterrupted, cannot lead me to prophesy but a short crop; and as it is the finest blossoms that are destroyed, I apprehend I shall not be far wrong as far as my trees are concerned.

With regard to Peaches and Nectarines there were only about four blossoms in a dozen fully out, excepting one or two of the forward sorts, and these being in a more sheltered spot have not, so far as I can see, suffered. On most trees there is a capital show of blossoms to come, so I hope we shall once more

be favoured with a good crop. My trees have for a long time been protected by hexagon netting and frigi domo, as well as by Laurel twigs and Spruce Fir; the object of this is to keep the buds in a more backward state till such severe frosts as we have lately had are not likely to visit us. It will be interesting to learn how others have fared from this late frost. I suppose it has been general.—THOMAS RECORD.

### OLD APPLE TREES, AND WHAT TO DO WITH THEM.

INQUIRIES having of late been made about the pruning and management of old Apple trees, and as there are few districts where more of this fruit is grown than in the neighbourhood of Maidstone, I make no apology for describing the general practice in such cases. Very old Apple trees are here only found in the grounds of the wealthy, or it may be of the careless class of cultivators, for the fruit-grower who pays a high rent for his holding cannot afford to retain old trees unless they are of some favourite sort; yet there are old trees, and they have to be dealt with as such, and if the operator is a new beginner the chances are ten to one that he does much harm, and half a dozen years afterwards blames himself for not having had them all grubbed-up. There is, however, often a tenacity to old trees; and the gardener or amateur fruit-grower, thinking something can be made of them, straightway sets to work with the pruning knife and saw, and the moss-grown thickets of branches are severely thinned-out. In all probability the shape of the tree is improved, and it is thought a great change for the better has been made. Unfortunately the issue often proves the reverse; for although some useful good fruit may result in the first year, if the preceding autumn has been favourable for the buds setting well and strongly, yet after that improvement is often at an end. Such instances are common—in fact, so much so, that old fruit-growers with whom I have had the opportunity of conversing condemn any severe cutting of an old fruit tree as being almost sure to end in disappointment.

As it is certain that Apple trees as well as everything else do get old, the question likely to be asked is, What can we do with them? The man of business who sends his hundreds of bushels to market every week says, "Destroy them, and plant something else for a few years, after which Apples may be tried again;" but some careful and skilful orchard managers contrive to keep these old trees in a healthy good-bearing condition longer than their neighbours. If we look into their practice we shall see that their trees have never been subjected to the barbarous ordeal of a severe pruning, but that their growth has been encouraged, and only slight amputations made each season during the early years of the tree's growth; that a yearly supervision had been exercised when it had arrived at mature age, just cutting off sufficient every season to prevent the tree having a crowded appearance. These cuttings, of course, become less and less each year as the trees attain age, and the growth becomes less free; and finally, when this is confined to the formation of spurs, it is not prudent to allow too many of them to be formed, or at all events to allow the tree to become too much stunted. When such is the case it is better to apply manure to the roots to accelerate growth rather than subject the tree to such fearful amputations as are often seen; for there is more analogy between vegetable and animal life when in an advanced stage than is often supposed, and the one cannot bear a serious surgical operation any more than the other, hence the failure; whereas by a careful and coaxing process the tree may be encouraged to develop itself into the largest dimensions it is capable of assuming. Its measure of years is also augmented—not that such can be extended to an indefinite period, but it can be done to a certain extent. There is abundant evidence to prove that a severe pruning hastens the dissolution of the tree, as well as renders its later years unfruitful.

The foregoing remarks apply more especially to standard Apple trees standing a considerable distance apart, with sufficient room on all sides to form large fine heads, from some of which it is not unusual for forty bushels of fruit to be gathered. Such trees, whatever may be said in favour of cordons, espaliers, and other fancy forms (and doubtless they have all their advantages), are the main sources from which the million obtain their fruit, and an orchard of them when at its prime is perhaps one of the prettiest objects that can be looked upon in May and September. As it is advisable to prolong the bearing condition of such trees, the mode above recom-

mended is more likely to do so than letting them alone for a great number of years, and then cutting from them dozens of faggots. It may be asked, "What can be done with the trees when by accidental circumstances they have been neglected?" I would say, At once destroy the most unpromising trees, cut but sparingly those that are left, and by planting others where they are likely to do well, a supply may perhaps be kept up. Of course, circumstances will regulate this in a great measure, but it will often be found that in after years, when the young trees are arriving at a good bearing condition, the regret will be that the whole of the old trees were not destroyed at first.

Another question has been mooted, and that is, "Cannot old trees of indifferent kinds be grafted with newer and better sorts?" This they can be easily enough, and by cutting off all the branches at some smooth place where they are only about the thickness of a broom handle, they can be grafted readily, and it is not unusual to see from fifty to a hundred or more of such heads on a tree. "But how do they succeed?" is the question. Alas! too often badly. They grow the first year freely enough, and, perhaps, for one or two years after that; then causer often sets in, or it may be the grafts get broken off with high winds, and in half a dozen years the tree not unfrequently dies. This is especially the case if it is old and stunted. If young, with a vigorous constitution, it will do very well and last many years, and with a little care for the first few years the grafts may be prevented from being blown out; but it is only with healthy young trees that success is at all certain, and the experienced workman can tell tolerably well at a glance which will do and which are uncertain. I need hardly say that trees like the above, when cut down, bear fruit sooner than those grafted on young maiden stocks; but whether it is prudent to depend on a cut-down tree or plant a new one, is one of the questions that can only be solved on the spot. Generally speaking, where a healthy young tree of an indifferent kind occupies a good position, it is best to cut it down and graft it with a better kind, as it will quickly bear fruit and do well; but it would be quite another thing if that tree had to be removed. In this case the young small one would have the advantage. But it is needless to enlarge further on this head, as individual cases, as well as individual wants, point out what is prudent to be done better than any amount of general instruction.—J. ROBSON.

### NOTES BY THE WAY.—No. 4.

GARDENING, as we understand the term, does not exist among the natives of Mentone. The gardens, such as they are, are planted with Oranges and Lemons with a view to profit; but with the exception of some flowering trees and shrubs, which take care of themselves, there is no attempt at what we call gardening. The climate is so favourable to vegetation that the native population have all they require without much effort; but such a style of gardening does not quite suit an Englishman's ideas, and even there he who desires to indulge his taste must surmount many difficulties to enable him to do so. The only place worthy of the name of a garden is that formed by the eminent English physician Dr. Henry Bennet, whose name is so closely associated with that of Mentone and the health-resorts of the shores of the Mediterranean.

A little more than a mile out of the town on the road to Genoa, and just beyond the Italian frontier, the visitor may see the British flag waving on one of the watch towers of the ancient castle of Grimaldi. One wonders at first what it can mean, and the idea of a British protectorate over the youngest of European kingdoms is a pardonable solution of the difficulty. On inquiry, however, at the custom-house, which is close by, we are told that it is the English garden of "Le Docteur Bennet." Looking at the place from below it seems an odd situation on which to make a garden. To all appearance it is the face of a precipitous rocky mountain where nothing but a bare vegetation exists, and like the other barren spots of the neighbourhood, one of the most unlikely places for such a purpose. But let us ascend the winding track which zigzags up to the village of Grimaldi, and after mounting a height of about 200 feet we reach the entrance. How suddenly all ideas of rocky barrenness are dispelled! From the gate a broad walk extends in a straight line, with square stone pillars on either side at distances of 18 feet apart, and festooning from pillar to pillar are climbing plants of various kinds, among which we observed fine specimens of *Maréchal Niel* and *Gloire de Dijon* Roses, *Clematis* of different kinds, *Passifloras*, &c., and on the borders there are large specimens

of such plants as we are only accustomed to see dwarfed in flower pots in greenhouses at home. Here were immense plants of *Salvia involucrata*, quite a great shrub gloriously in flower; *Salvia splendens*, *Medicago arborea*, *Polygala grandiflora*, *Lantana verbenacea*, all equally large and shrub-like. Under the name of *Salvia fulgens* was a handsome tree of *Ipomoea grandiflora* with its fine blue trumpet-shaped flowers. On one of the terraces was a fine pair of *Musa Ensete*, the leaves of which were 9 to 10 feet long, and in luxuriant health; and near them, rambling in picturesque natural entanglement, was a brilliant mass of the charming *Senecio mikanoideus* in full bloom. The roof of a shed was completely covered with a *Bougainvillea* with a fine red flower which we had never seen before. Dr. Bennet received it under the name of *B. Warszewiczii*, but whether it is distinct from the species usually grown in English gardens is doubtful, as it is quite possible that the intensity of

colour may be due to the strong sunlight under which it was basking. We saw the same plant grown in-doors under glass, and it was much paler and more of a mauve colour. It is very remarkable the effect that the intensity of light has here on the colour of flowers. Plants of *Primula sinensis* fully exposed were of the deepest red, while the same when slightly shaded were of the same colour we are accustomed to see them at home. But one of the most gorgeous plants in the garden was one of *Tacsonia ignea* growing against one of the terrace walls in the most luxuriant manner, and literally smothered with its fiery red blossoms; one can hardly imagine anything more rich and beautiful than that plant was. Another plant that attracted our attention was a fine tree of *Abutilon Duodecimnervium*, full of its large, drooping, richly-streaked flowers.

This remarkable garden is a series of terraces one above the other, much in the style of what we should suppose the hang-



DR. BENNET'S GARDEN AT MENTONE.

ing gardens of Babylon to have been. It overhangs the Genoa road already mentioned, and in front of it lies the blue Mediterranean, which, on the occasions we visited the garden, lay at its base smooth and placid as a mirror, and the grey outline of Corsica in the distance. The whole extent is about eight acres, all of which will ultimately be included under cultivation, but at present a considerable portion of this is only in the process of being enclosed. Next the Genoa road and on the very brink of a perpendicular rock it is enclosed by a wall—the wall of the ancient castle, and the top of this wall has been utilised by Dr. Bennet as a place on which to grow a rich collection of Cactaceæ and other succulents. Instead of a coping, the wall is surmounted by a trough, which is filled with suitable soil in which these plants are growing. This was begun by way of an experiment, and has been perfectly successful. On the lower terrace is an elaborate piece of rockwork planted with succulents, and among these we observed fine specimens of *Opuntias*, *Cacti*, *Euphorbias*, *Aloes*, *Agaves*, *Dracenas*, &c. We remarked *Opuntia monacantha*, *O. imbricata*, *O. fulvispina*, *O. Ficus-Indica*, *O. microdasys*, *O. Mallisoni*, and *O. cylindrica*; *Aloe mitriformis*, *A. ciliaris*, *A. variegata*; *Mesembryanthemum echinatum*, *M. hispidum*, *M. perfoliatum*, *M. Ehmanni*, *M. cordifolium*, and *M. barbatum*; *Cereus ramosus*, *C. pugioniferus*, *C. virens*, *C. formosus*, *C. Martini*, *C. triangularis*, *C. serpentinus*, *C. Paxtonianus*; but these are not a tithe of the collection.

When the whole of the space which is now being enclosed yields to the designs which Dr. Bennet intends to carry out,

this barren grey mountain will become a paradise clothed with luxuriant vegetation gathered from tropical and sub-tropical climes; and when completed will remain a memorial of the genius of one who has done so much not only to ameliorate the bodily suffering of his fellow creatures, but to contribute to their mental pleasure.

Our illustration is taken from Dr. Bennet's work, "Spring and Winter on the Shores of the Mediterranean," one of the most delightful and entertaining books we have ever read.—R.

#### A FEW WORDS ABOUT LAWNS.

I BELIEVE the lawns of the United Kingdom, in point of general good management and the lively green which they present to the eye, are not equalled by those of any other country; and I have heard that foreigners, when visiting our public parks or the country homes of our nobility and gentry, recognise and are charmed with this particular feature of British gardening. Certainly there are few features connected with a country residence which add more to the beauty of the place and the enjoyment of the family than well-kept lawns, affording, as they do at all seasons, that shade of colour so refreshing to the sight, and on which the eye loves to rest. When, as generally is the case, lawns adjoin the house, and are necessarily seen from the windows of the principal sitting and other rooms, it becomes highly important that they be kept in first-rate condition, both as regards the fresh healthy appearance of the grass and the general neatness of the sward.

It is a fact that the majority of ladies and gentlemen, even when residing at their country seats, spend the greater portion of their time within-doors; and it is therefore necessary, as one means of contributing to their enjoyment, that all dressed grounds seen from the windows of the mansion be kept in as orderly a state as possible. In some places the strength allowed for the purpose of keeping lawns and other dressed grounds in order is insufficient for the extent of ground to be gone over. In such instances it is impossible for those who have the work to do to maintain that order and neatness without which dressed grounds lose their principal charms. I think I am pretty nearly correct in saying, that to keep an acre of lawn in first-rate order the year through requires as much labour as the same extent of kitchen garden cropped in the usual way. It is, however, difficult to make this understood by those who have not had practical experience in the matter, or a knowledge of the strength required to maintain good order in both departments.

If we would really have a fine lawn, with a sward like velvet, exhibiting the hue of the emerald, we must keep it free from all coarse-growing weeds, such as Dandelions, Plantains, &c. Of all intruders amongst the herbage of lawns, the most difficult to keep under subjection is the round-leaved Plantain, *Plantago major*. Nothing short of digging it out by the root will be of use. If any portions of the roots are left they will be certain to grow, and each become an independent plant, thereby forming a mass where only one existed before. March and April are the proper months in which to go over lawns for the purpose of giving them a general clearing from weeds, and applying a top-dressing where the condition of the sward requires such. After the weeds are cleared off, the holes from which they have been taken should be filled with fine soil, over which, and all other bare spaces, scatter some Dutch Clover and lawn-grass seeds. Then go over the whole surface with a bush harrow, following with the roller. If the surface is dry when the last two operations are being performed, all the better. As a matter of course, regular mowing is necessary to keep up a smooth surface, and this operation should not be neglected. At the present day it is mostly performed with the mowing machine; but it is a good plan to go over lawns with the scythe twice or thrice during the season. The best machines will leave some bents uncut, which detract from the look of the sward, and their removal requires an occasional application of the scythe. All inequalities in the general level of the surface should be done away with, as a few of these, whether dipping below or rising above the general level, mar the look of an otherwise fine sweep of lawn.

In bringing heights or hollows to the desired level, in the first place the turf must be removed from them and put on one side; then, as the case may be, reduce or fill-up to the proper level the spot causing the inequality, and replace the turf again, finishing by making it hard and firm with the turf-beater. In the case of filling-up hollows, allowance must be made for the sinking of the fresh soil. It is therefore necessary that the turf on these be left a little higher than that of the surrounding sward.

When levelling the surface of a lawn by piecing, avoid as far as possible using any turf but what is found on the spot. If new turf from a pasture field is used, it will likely give to the sward a patchy appearance; and this is an undesirable feature for the surface of a lawn to assume. Where many inequalities exist on a lawn, the turf should be all taken off, and the surface of the ground properly levelled and made moderately hard by treading the whole with the feet; then, immediately before replacing the turf, go over it with the rake for the purpose of giving a little roughness to the surface before the turf is laid upon it. The person who does the work of replacing the turf should have at hand some fine soil for the purpose of packing with, as the turf will not be all of a thickness. Every care, however, should be taken at the time they are being cut to have them of uniform breadth and thickness, more particularly the latter, as if they are not so, much time is wasted through having to remove or add fresh soil as the turfing proceeds. It is therefore essential to making a good finish that the turf be all of as near a thickness as it is possible to have it. As the turfing proceeds it must be beaten down firmly, leaving the surface smooth and regular, and when all is laid, have a good rolling with a heavy roller.

This plan of obtaining uniformity of surface is much preferable and more economical in the end than attempting to do so by dealing with spots here and there, as all such patching comes short of giving to the surface that fine finish obtained

by lifting the whole breadth at once.—J. HAMMOND, *Brayton*.—*(The Gardener.)*

## NOTES ON VILLA AND SUBURBAN GARDENING.

WHAT can be done with the limited means of a two-light frame towards producing a supply of flowers for the drawing-room throughout the year, is a question difficult to answer, inasmuch as we often see greenhouses containing extensive collections of plants almost destitute of flowers from October until the following April. However, if too much is not attempted—for the amateur more frequently fails by attempting too much than in being satisfied with a few easily-cultivated but good plants—I am confident that it is possible to have a few flowering plants at all seasons, with the aid of a two-light frame and other little inexpensive contrivances which I shall hereafter explain. Before proceeding to show with what plants this desideratum may be accomplished, I will premise that there must be no huddling of them together merely because they have a solitary flower or a few green leaves upon them, but the whole frame must be given to the plants enumerated, and after they have done flowering they must not be returned to the frame, but be either thrown away or preserved in a room or window until the following summer.

A two-light frame of the usual dimensions will cover an area of 36 square feet, and, allowing on an average each plant to occupy half a square foot, will hold six dozen flowering plants, or, as they will not all be in flower at the same time, say nine dozen plants.

Supposing, then, the season when there is the greatest difficulty in producing flowers, and when, in consequence, they are the greatest luxury, to commence in October and end in April, the following plants will be most suitable. From October to Christmas *Chrysanthemums*, *Pelargoniums*, *Salvias*, *Cinerarias*, *Primulæ*; *Russian*, *Neapolitan*, and other *Violets*; with *Collinsias*, *Clintonias*, and *Mignonette*. From December until March the above annuals, with *Violets*, *Primulæ*, *Cinerarias*, and the following bulbs: *Scillas*, *Crocuses*, *Snowdrops*, *Hyacinths*, *Tulips*, *Narcissuses*, and *Jonquils*. From April until June the whole of the above annuals, with *Schizanthuses* and *Ten-week Stocks*, a variety of Chinese, Tea-scented, Bourbon, and other *Roses*, and a general assortment of *Pelargoniums*. In summer, plants in rooms are not so much cared for; and if they are, a list of the kinds suitable is not necessary, as there are few persons who are not acquainted with the plants best adapted for that season.

To give the treatment of all these plants would require considerable space; but as the time to commence their culture is at hand, the necessary information respecting them will be given shortly. In the meantime, persons intending to cultivate them cannot be wrong in purchasing good varieties of any of the above genera.

After frosty nights and sunless days there is little warmth in the earth. There will be no advantage in sowing annuals in the borders for a fortnight to come. A collection of German and Ten-week Stocks may, however, be sown at the foot of a south wall, or in any other warm place where they can be protected at night in severe weather.

A kitchen garden should be placed in the rear of the house, and be as near as possible to both it and the stable, communicating with each pretty easily and directly, and without the necessity of going through the pleasure grounds. The reason of these things is plain and simple. As a kitchen is in itself generally kept at the back of the house, and the kitchen garden has to be in communication with it, the two should be in close proximity. The manure, also, from the stables, having to be used in the kitchen garden, ought to be capable of being readily applied, and hence the desirableness of connecting the two parts as nearly as can be done.

All round the inside of the kitchen garden, whether it has walls or not, there should be a border of greater or less width, that according to its aspect the various kinds of suitable plants which take-up little space or require a peculiar position may find their proper place. Such borders are still more requisite when there are walls to give space for the roots of fruit trees to spread in them, and to bring the trees more thoroughly within reach. They may vary in width from 6 to 12 feet according to the size of the garden and the kind of tree that has to be cultivated in them. Borders with a sunny aspect can be wider than such as are colder and more shaded.

On the inner side of the walks, and either at the front or back of another small border, a good place for fruit trees treated as espaliers will be found. When walls are not used and there are not enough of them for growing such things as some of the better kinds of Pears, espalier fences will be a useful substitute, and may sometimes be employed with advantage for Apples; likewise strong wire fences about 6 feet high are mostly preferred to wooden ones for appearance and durability, and they are also more convenient because of the smallness and roundness of the bars. In the absence of espaliers, however, these inside borders may be appropriated to dwarf Pears, Apple,

Cherry, and Plum trees, and if the space permits, to Gooseberries and Currants as well.

This spring having been cold and wet everything is later than usual. In the meantime, during these sunny days, prepare for the main crops of Carrots and Parsnips, so as to get them in when the ground is dry. Both of these like a deep rich soil, and if it is of a light nature it is more suitable for their long tapering roots. They should follow a crop for which the ground was previously well manured, for if manured in the spring the roots will be ferked and wormy wherever they come in contact with it. Parsnips require a greater distance between the rows than Carrots; they should be sown in drills from 15 to 18 inches apart, and about an inch deep. The seeds being smooth do not require being mixed with soil like Carrots, but in every other way they may be treated alike. Drilling crops where it can be done is far more convenient than sowing broadcast, as the intermediate spaces can be easily cleaned and stirred-up, which is of great benefit to the plants. If the first sowings of Peas are not already staked it should be done without delay. If they are not sufficiently earthed-up, draw a little more to them before staking them. A sowing of Beans may now be made. Sow some Spinach to grow between the Peas. It is time for getting-in Potatoes, planting them about 2 feet apart. A sowing of Curled Parsley should also be made without delay; it delights in a good fresh soil. A small patch of Radishes should be sown for succession about once in three weeks. Lettuce, Celery, and Cauliflower may be sown in a warm border; the latter to succeed those that should now be planted out.

FLOWERS.—Do not uncover anything that is tender for a short time yet. Continue to dress the borders.

FRUIT.—Get Strawberry beds (if any), weeded before the plants have grown much, and keep down weeds wherever they appear.—W. KEANE.

### THE APPLE, AND HOW TO PRUNE AND TRAIN IT.—No. 2.

For the formation of a double cordon, or a tree having two horizontal branches, the one being trained to the right and the other to the left, as represented by *fig. 3*, the maiden tree



Fig. 3.—Double Cordon.

has to be cut down to just a little below the height at which it may have been determined to train the branches, 9 or 12 inches above the ground as the case may be. The two top buds in this case are those which require to be encouraged in order to form the branches *a, b*. In all horizontal training it is important to prune to buds that are situated a little below the line on which it is intended to train the shoots, because buds have at first a natural tendency to grow more or less erect; consequently it is difficult, without breaking, to train the shoots at once in a perfectly horizontal position. When, however, the shoots start a little below the line, by a nice gentle curve they are easily brought to their proper position; and further, it is found that shoots or branches trained directly horizontal from the bud do not grow with that same degree of vigour which those do which from the bud are at first trained a little upwards. For this reason, when a tree is weak, the branches *a, b*, may be allowed to grow in the position represented in *fig. 4*, in order that they may gain strength, when they must be brought down gradually to the horizontal.

In the second pruning of cordon trees (*figs. 3, 4*), the branches or shoots, *a, b*, if they have grown pretty strong, may be left at a good length, as the only object in view is to get them well supplied with fruiting spurs. This, like many other matters in regard to pruning, must be left in a great measure to the judgment of the operator. A strong shoot may be left 10 inches or more in length, whilst a weak one must be cut back very closely.

Another system of training the Apple, although not so much in practice as with the Pear, is that of the ordinary horizontal or espalier. It is simply a continuation of the "double cordon;" or, seeing that cordons have become fashionable subsequently to this older form, it would be the more correct to say that cordons are modifications of the old-fashioned horizontal. They represent one branch, or one course of

branches, of what may be extended to any number. *Fig. 5* will therefore represent the premier stage of this mode of training. It will be observed that in the pruning of the maiden plant a selection has to be made of three buds as a commencement of the future framework of the tree. The top or highest bud should be trained upwards, forming the stem *a*, the two others, being trained to either side, forming the first or lower tiers of branches *b, c*. It may here be remarked that all this training of the young trees is generally performed with stakes, a single stake being used for tying the main stem to, and a stake each for the side branches, or three stakes in all. The young branches have thus considerable freedom, and consequently grow freely.



Fig. 4.

Another point of considerable importance in the training and formation of young trees is that of giving all the shoots or branches the same advantages as regards position. A shoot or branch trained upright will grow much stronger than one trained in a horizontal direction; and if the most strenuous measures are not taken to prevent it, the greater flow of strength will always be to the top part of the tree. To secure

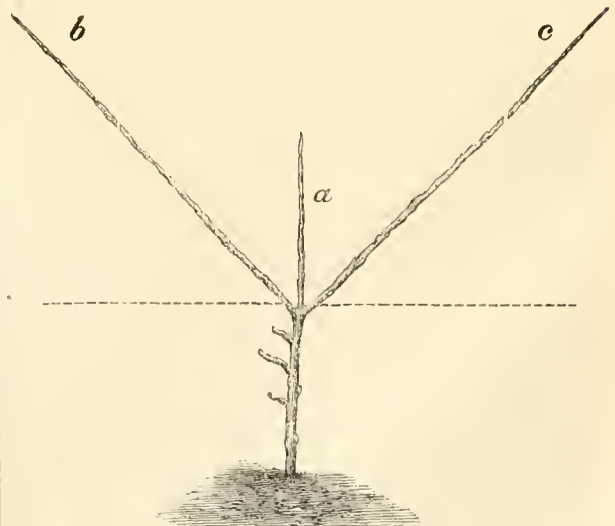


Fig. 5.—First stage horizontal Espalier training, showing second year's pruning.

uniformity and regularity of growth as far as possible, it is found necessary to train all the branches a little upwards, say

at an angle of 35° or so, as shown in *fig. 5*, until such time as they have attained their proper or desired dimensions. Then, when the whole of the branches are formed, they may be brought down to their proper or permanent position, as shown by the dotted line in *fig. 5*. In the pruning of the branches *b, c*, the object in view is their extension, and clothing or furnishing them with fruiting spurs. According to their strength, therefore, they should be pruned, so that they may produce one shoot for continuation and fruiting spurs. As to the main stem *a*, its purposes are altogether different. We have this to prune so as to produce another tier of branches similar to *b, c*, and a continuation of the main stem *a*. Assuming 10 inches as a very good distance apart for the branches to be, the main stem *a* may be pruned to the bud that is exactly 10 inches distant from the other branches. This top bud will be available for the continuation of *a*, and the next two lower buds for the formation of branches like *b, c*. In the following year the same process is repeated, forming another course of branches, and again in the succeeding years, until the required size is attained.—B.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

Last week it was noted that the weather was cold, with a low temperature at night. The frost continued to increase in intensity, and was at its lowest on the morning of the 10th, when the thermometer registered 13° below freezing; on the 11th it was 11°. It is doubtful if expanded blossoms on wall Apricot trees have escaped. Pyramid Pear trees were not sufficiently advanced to sustain injury, owing to heavy falls of snow; and the ground being in a sloppy condition at other times through the sun acting on the frozen ground, operations have been brought to a standstill. There is always plenty of necessary work in the sheds at such a time. If Pea sticks have not been pointed and sized, this should be attended to. Heaps of vegetable mould can also be turned, and in places where manure is not easily obtained it is very valuable as a substitute. The heap ought to be kept free from stones, seeds of weeds, and woody matter.

### FRUIT AND FORCING HOUSES.

*Vinerics*.—The early houses are progressing very favourably this season; the largest proportion of the bunches have been thinned. This ought to be done as soon as the berries are large enough, which, in the case of such sorts as Black Hamburgh, the Frontignans, and Sweetwaters, will be in ten days from the time of the first flowers opening. Muscat of Alexandria, Canon Hall Muscat, and similar shy-setting sorts cannot be thinned until it is evident which berries have set. This will be apparent in two weeks from the time of flowering if an average night temperature of 70° has been kept up. Thinning Grapes is an operation requiring much care and judgment, and a high degree of perfection can only be obtained by experience. The two essentials are a steady hand and a large stock of patience. A bit of stick as thick as a cedar pencil, with a fork at one end, is held in the left hand to steady the bunch, and a pair of scissors in the right, and in using the scissors great care is necessary to prevent them from touching the berries that are to remain. The scissors should also be wiped very frequently with a dry cloth. Many gardeners remove only a portion of the berries at this time, making a second thinning. This is not desirable: all the berries that are to be removed should be taken off the first time. The laterals are pinched a few days before the first flowers open, and the Vines are left alone until all the Grapes are set. We fancy that the slight check which the Vines necessarily receive from stopping the laterals would act upon the bunches, and to a certain extent prevent the berries from setting so freely as they otherwise would. The laterals are stopped and the branches regulated as soon as the berries are set. The borders inside and out receive a thorough soaking with tepid water, and a little fresh stable manure is added to that on the border outside, which requires to be turned over to allow of the water being applied. A slight dressing of manure is also put over the inside border, so that the nutriment from it may be washed down to the roots. After this time it is highly desirable to maintain a good supply of atmospheric moisture from evaporating troughs, and by damping the paths and walls of the houses three or four times a day in hot weather. The Vines are breaking freely in the late houses. The Muscat house ought to have a little artificial heat, but being filled with bedding plants we will not do so until they can be removed. Lady Downe's late black Grape has kept much better with us than any other variety; there are still a number of bunches left which were cut early in January, the branch attached to the bunch having its end inserted in a bottle of water.

*Peach House*.—During the recent weather, cold and with little sunshine by day, it was better to let the temperature fall 5° below the minimum than to apply too much heat to the hot-water pipes. Inside borders often become overdry, and it takes

a very large quantity of water to moisten them to the bottom; this is all-important, and should be looked to. Red spider must not gain a footing, and aphids must also be destroyed; this enemy cannot be dislodged by syringing, but the house must be fumigated with tobacco smoke. If the fruit has not been finally thinned in the earliest house, thinning ought to be done before the fruit has completed stoning. If the trees are old, do not overcrop them; one fruit to every square foot of surface is a fair crop. The trees would carry a larger quantity than this, but it is not desirable that they should do so. Late houses, where the trees are in blossom, must be ventilated freely, but the sashes should not be thrown open to a cutting frosty wind. A chink of air should be left on at the top of the house all night, and during the recent severe weather it has been necessary to use artificial heat. Shake the trees once or twice a day, which will cause the pollen to be distributed freely, and will ensure the setting of the fruit.

### PLANT STOVE.

We found it necessary to put up the summer blinds for shading. The sun is very powerful at this season, and, acting upon the expanded flowers and young growths of hardwooded plants and Ferns after a period of dull weather, it has a very injurious effect. Many persons do not take their shading down during the winter; indeed, in cases where the heating apparatus is deficient, it is absolutely necessary that there should be some covering which can be let down when the nights are unusually cold. For our own part we do not approve of covering up too much in winter, and would rather have all houses well fitted with hot-water pipes. The shading ought to be nailed to a lath fixed at the apex of the roof, and be let down and pulled up by roller, lines, and pulleys. Mealy bug had appeared on one or two of the plants which had been recently purchased; these were cleaved at once. It is very desirable not only to thoroughly wash any new plants that are bought in, but they should also be watched for a few weeks afterwards. Look over all plants subject to this horrible pest, and have every vestige of it removed. Soft soap and rain water applied with a sponge is the best way to remove them.

Potted *Calanthes*. The varieties we grow are *C. vestita lutea*, *C. vestita rubra*, and *C. Veitchii*. Usually they are potted before starting into growth; this time they had just started, and fresh roots were pushing from the base of the young growth, so that they will start into the fresh material at once. The potting material was composed of turfy loam and fibrous peat in nearly equal proportions, with a little sand and sphagnum moss intermixed. The plants will not receive any water for a week; they are placed in a house where the temperature ranges from 65° to 70° at night. These valuable winter-flowering plants are easily cultivated; they succeed with ordinary stove treatment, and the flower spikes will keep for three weeks in water in a room after being cut from the plants. *C. Veitchii* is now common, and can be obtained at the price of the usual run of stove plants.

*Caladiums* were also shaken out of the pots and repotted after having been started into growth. The compost used consisted of turfy loam, about two parts to one part of peat, with some rotted manure added to it. The plants should be placed near the glass, and kept free from green fly and red spider by syringing. There ought to be a liberal supply of moisture kept up by syringing the plants that require it in the morning, or, if the day is fine, early in the afternoon. The paths and stages may be sprinkled with water during the day.

### FLOWER GARDEN.

The time has now arrived when gardeners are driven up for room for bedding plants. Justice cannot be done to late Vines that are starting into growth if the house is full of bedding plants. Calceolarias may be planted-out in trenches at once, and as soon as opportunity offers we shall have a turf pit put up. After the middle of March zonal Pelargoniums, Verbenas, Lobelias, Centaureas, and other tolerably hardy subjects will take no harm in such a place. They ought to be covered at night with straw hurdles or some other efficient protector. The straw hurdles were employed by us for two or three seasons, but the straw was attractive to mice, which used to gnaw it and made the place littery. As a substitute frigi domo was nailed on the hurdles; this is not half the trouble of straw. The same material has served us three seasons, and is quite good yet. Cuttings that have been struck in heat should be gradually hardened-off; to remove them from a hothouse all at once to a cool greenhouse would be injurious. If there is not a sufficient stock of everything required for the flower beds, cuttings must be put in without delay.—J. DOUGLAS.

POTATOES.—In the last two months the value of Potatoes imported was £310,993, against £544,639 in the same period of 1873.

## TRADE CATALOGUES RECEIVED.

T. S. Ware, Hsle Farm Nurseries, Tottenham, London.—*Catalogue of Antirrhinums, Hollyhocks, Pinks, Carnations, &c.*

Lawson Seed and Nursery Company (Limited), 1, George IV. Bridge, Edinburgh, and Southwark Street, London, S.E.—*Catalogue of Agricultural Seeds, &c.*

James Carter & Co., High Holborn, London, W.C.—*Catalogue of Farm Seeds—Essay, How to Lay Down Land to Grass.*

### TO CORRESPONDENTS.

N.B.—Many questions must remain unanswered until next week.

BOOKS (II. P.).—We have a copy of the Rev. Mr. Thomson's "Amateur Rosarium." The London publishers are Messrs. Hamilton, Adams, & Co.

ORCHIDS FOR GARDEN FRAME (J. S. H.).—There are really no epiphytal Orchids which we can conscientiously recommend for an ordinary garden frame. There are, however, many beautiful kinds amongst the terrestrial section, some of our indigenous species being extremely handsome when grown in the position you name. We have been promised an article upon this subject from one of our contributors in the course of a week or two, in which you will probably find all the information you require, and far more than we can supply in a short answer in this column.

DESTROYING RATS AND MICE.—"E. C., Oakham," says he has found the following very efficacious.—Having a bullock's gall from the butcher he boiled it with some wheat; twice used it readily. He adds that it is poisonous to rats, mice, or Pigeons, and perfectly harmless to other animals.

CYCLAMEN CULTURE (A Constant Reader).—In our next number we purpose giving full directions for Cyclamen culture.

CHILIAN BEET SOWING (D. E.).—Sow it early in April in pans or boxes, and place them in a frame where there is a gentle heat; keep near the glass, and when the seedlings are up admit air freely. When the second leaves appear prick them off about an inch apart every way, and place them in a cold frame, where they should be kept close and shaded until the plants are growing freely, then admit air and light, and harden well off before planting out. You may sow the seed rather thinly in a sheltered border early in April, and transplant to the ribbon border in moist weather in May; or sow about the middle of April where the plants are to remain, thinning them out to 9 inches apart.

SKIMMIA JAPONICA SEEDS VEGETATING (R. S.).—Some of the seeds should vegetate the same season if sown as soon as they are ripe, but we should not despair of them if they were not to vegetate the first year; in this case we would keep them in a cool house, and with the soil moist, until the second year, when no doubt the plants will appear if the seeds are good. There are not separate male and female plants as with the Aucuba. We are obliged by the capsules of Nertera depressa. The Fern is too small and too dried to admit of identification.

TREATMENT OF TUBEROSES (E. S.).—Pot the roots now in a compost of two parts sandy fibrous loam, and one part leaf soil, or a fourth of well-rotted manure, with a sixth of silver sand, removing all the offsets, and pot so as to cover the roots, leaving the neck only exposed. Place in a hotbed, and do not water until the plants begin to grow, and then keep the soil moist, increasing the supply of water with the growth; water abundantly after the flower stems appear. The plants should be frequently syringed to keep down red spider, and have a light airy position in a greenhouse or other place after they are well advanced for flowering, until which time they should be kept in gentle heat.

GRAFTING APPLES ON PEAR STOCKS (Idem).—It is not advisable to graft Apples on Pears, for though they may take and grow a short time, they are very weakly, and soon die off.

GNIDIA PINIFOLIA TREATMENT (A. S. A.).—It will soon be in flower, after which it should be cut-in rather closely, keeping rather dry and cool for a fortnight. When the young shoots are an inch long repot, keep rather close and moist, and shade for a few days. Young plants may be shifted in spring as well as in summer, having irregularities of growth cut-in a fortnight or three weeks before potting. Use sandy peat and a sixth of silver sand, pieces of charcoal, and broken pots, with extra drainage. Very careful waterings are necessary, especially in winter, also a light airy position in a greenhouse.

LIQUID MANURE FOR CYCLAMENS (Idem).—Weak liquid manure at every alternate watering will improve the plants and bloom after the pots are full of roots and the plants have good foliage. If the plants have not good foliage, and the pots not full of roots, the manure water is not advisable.

ADDING SEA SAND TO COMPOST (J. N.).—Sea sand is not good for mixing with soil for sowing seeds. It might not injure the seeds or prevent their germinating, but we have not found it safe.

LOWERING THE CROWNS OF SEA-KALE (Idem).—The stools when they become high and straggling may be cut over level with the ground, and they will form fresh crowns close to the surface. It should be done early in the year, or when the stalks are cut, so as to allow of fresh shoots, and consequently crowns, being formed for another year's produce.

VINES RECENTLY PLANTED (Idem).—Allow all the shoots from the three eyes inside the house to grow, and train the uppermost directly up the roof without stopping, but the others we should stop at the sixth leaf. The eyes outside we should not rub-off until the three eyes inside the house were fairly broken, and then rub-off all but those required.

VITALITY OF SEEDS (Idem).—Kitchen-garden seeds are all best fresh or new. All seeds vegetate more weakly and uncertainly after the year following their ripening. Mr. Loudon furnishes a list of the greatest age at which our vegetable seeds will germinate, which, along with other interesting matter pertaining to the germination of seeds, is given in the "Science and Practice of Gardening," pages 10, 11, and 12, from which we take the following:—One year—Peas, Beans, Kidney Beans, Carrot, Parsnip, Orach, Bunchard. Two years—Radish, Salsaf, Scorzoneria, Purslane, the Allium (Onion, &c.), Cardoon, Rampan, Tomato or Love Apple, Capsicum, Egg-plant. Three years—Sea-kale, Artichoke, Lettuce, Marigold, Rue, Rosemary. Four years—Brassicas (Cabbage, Cauliflower, Broccoli, Borecole, Brussels Sprouts, Savoy, Turnip), Shireet, Spinach, Asparagus, Endive, Mustard, Tarragon, Borage. Five and six years—Burnet, Sorrel, Parsley, Dill, Fennel, Chervil, Hyssop. Ten years—Beet, Celery, Cucumber, and Melon.

LAWN MOWERS (J. A.).—We only reported trials made, we believe, at Chiswick; and we invariably express our genuine belief that every variety of lawn mower acts well if properly managed.

RHODODENDRON LEAVES EATEN (J. B.).—The leaves are eaten by some caterpillar or weevil, which is commonly found on the plants when grown under the shade of trees, and where the ground is covered with grass. There is no remedy but to keep them free of weeds and grass, also clear of trees, and examine the plants frequently when making their growth. If any caterpillar or weevil is found at work, sprinkle the leaves with white hellebore powder for the caterpillars; and the weevils may be taken at night by spreading a sheet under the plant, and shaking them on to it. The Rose leaves show the plants to be unhealthy, perhaps owing to want of air and light, but more probably from an unhealthy state of the roots.

CAMELLIA FLOWER BUDS FALLING (Idem).—The chief cause of this is a bad state of the roots. We should at once repot the plants, removing all the soil that comes away freely from the roots, and repot in a compost of light sandy turfy loam, the top inch of a pasture, with the turf chopped up rather finely, draining well, and potting firmly, keeping the neck or collar of the plants rather high in the centre of the pots. The plants will need to have the soil always moist, and to be abundantly watered when making fresh growth, taking care not to sodden the soil by needless watering. Afford slight shade from bright sun in summer.

CONSERVATORY CONSTRUCTING (Sussex).—In constructing your house we do not consider it would be very much more economical to have wooden boards or shutters hinged, instead of glazed sashes for the top ventilators. The boards are liable to be warped and twisted by the sun, so that in a short time they become very objectionable; besides admitting wet from cracking, they prevent the admission of light. We should only have top ventilation on one side of the ridge, and that the warmer one. For a small house the lights need not be more than 18 inches wide, and the whole length of the ridge, opening with cranks and lever the entire distance, little or much as may be desired.

HEATING A CONSERVATORY WITH HOT WATER (Idem).—The only thing that can be said in favour of a flue is that it is cheaper; but that a hot-water boiler and pipes are apt to get out of order if not in constant use, is not consonant with our experience. Indeed, some not used any more than a flue—viz., to keep out frost, are not worse than others, the fires of which never go out, except for repairs. The water will not corrode the iron more, nor is the wear so great, but the boiler and furnace should be thoroughly cleaned instead of being left dirty. Except for small greenhouses, flues are not safe nor desirable.

PERFUMERY FLOWERS (Dick).—We will not say that Violets and other fragrant plants will produce as much of their constituent perfume as they do in warmer climates, but it is certain that they do produce sufficient to render them worth cultivating.

RED LEAD FOR THWARTING MICE (Puzzled).—Your Peas failed from some other cause than applying red lead to them. The late Mr. Fish gave the following directions for using it, and the result:—Cover Peas and Beans with an incrustation of red lead in powder. For this purpose the Peas are slightly damped, and a little of the powder sprinkled over them, and the seeds well stirred together with a stick until all are coloured. Very little lead goes a great way; a pinch or two would do for a sowing of small seeds. It is as well to have a pot or saucer for the purpose, and then less will be wanted each time in succession. We found seeds treated as above last season, turned up with bill, nose, and claws, but not taken, and the turning-up was soon let alone. Neither birds nor four-footed depredators seem to partake of seeds so treated.

THWARTING MICE (Summer Island).—Your plan of covering the rows of peas with river sand, which you find prevents the mice altogether from scratching up the peas, as it runs in on them every time they make a hole, is a very well-known practice. If you rolled the peas thoroughly in red lead before sowing, the mice would not touch them.

ARCHIMEDEAN LAWN MOWER (A. E. A.).—We have used the small sizes of this machine and found it very efficient. It was made to scatter the grass over the lawn, and in summer this very soon dries up; but later in the autumn when the grass gets a little longer than usual, the cut grass lies on the surface and is untidy. It is quite out of our province to recommend one maker more than another.

VINE AND PELARGONIUM LEAVES INJURED (H. B. W.).—The sulphur mixed with the whitewash is good and would not injure the Vines in the least. There is no doubt but that it is the tar varnish. Tar on hot-water pipes is fatal to plant life as soon as the pipes are heated. Until it is thoroughly cleansed from the pipes the Vines will not succeed. How to do this is another thing. We can only suggest scraping it off. We always use lampblack for painting hot-water pipes, and when this is dry there is no danger to the tenderest plant.

SIZE OF SASH-BARS (G. T. E.).—The sash-bars will be quite strong enough, 2½ by 1½ inches. Of course you will have rafters of 4½-inch stuff, which ought to be held together with iron ties, and in a house 10 or 12 feet wide it will not be necessary to have any other support. You are quite right as to there being such a Rose, but not a H.P.

PEAR TREE UNFRUITFUL (G. P.).—We do not know what more you can do for your tree than you have done. Probably the variety will not succeed in your garden. If the stock is healthy it would be better to regraft with some sort that will succeed in your own or your neighbours' gardens. If the fault is in the stock, as by your account probably it is, dig the tree up root and branch and plant a young one, after having trenched the space well up and added some fresh loam. In such soil as yours we would plant trees on the Pear stock.

PROPAGATING CAMELLIAS (Monarch).—The stocks are propagated by cuttings of the single free-growing varieties, or better by seeds. The latter should be sown in heat and grown-on. Cuttings strike most readily at the close of July or early in August—the shoots being firm at the base. They are usually about 4 or 5 inches long. Remove all the leaves but the two uppermost, cut over the shoot below the lowest joint, and insert singly in the smallest size of pot, in a compost of equal parts of peat, loam, and sand, with a surfacing of half an inch deep of silver sand. Plunge the pots in a bottom heat of 10° warmer than the mean temperature in which the plants were growing. They require to be kept close and shaded, and in about six weeks they will be rooted, when they must be shifted into 3-inch pots, continued in gentle heat until they have formed good roots, and may then be hardened off. In spring they should be placed in a moist and rather close atmosphere, and grown in heat until June, when they may have more air, and be kept cooler. In the following spring they will be fit for grafting, which is best performed just before the plants are beginning to push. Whip-grafting is perhaps the best; the grafts should be of the ripe wood of last year. The stocks must be placed in a bottom heat of about 75°, and after grafting should be covered with a frame or hand-glass, and kept close until the grafts have

taken, when a little air may be given, but not so much as to exhaust the growth. Admit air gradually as growth proceeds, withdrawing it when completed, and then admit more air and light to ripen the wood.

**FIGUS CULTURE (P. T. B.).**—The plants should now be pruned, shortening the shoots of last year so as to form a good specimen. The lower shoots ought to be left longer than the upper, narrowing from the base upwards to a point, and the leading shoot cut back to about 6 inches. This for pyramids. Those which are to form bushes should be pruned more equally in length from top to bottom, the shoots disposed so as to form compact plants. Long straggling plants we should cut back so as to induce the production of shoots near the base, taking up a shoot as a leader, and stopping it as well as the side shoots to promote a compact habit. After the plants have made shoots about an inch long, turn them out of the pots, remove most of the old soil—in fact, all the loose soil, and return to the same size of pot, or if in small pots previously, give a pot a little larger, draining well, and using a compost of turfy loam three parts, half a part each of leaf soil and well-rotted manure, with a sixth of silver sand. The whole should be thoroughly mixed and made fine, but not sifted. Keep them in the room until May, and then you may remove them to the porch, which we presume has glazed windows or doors, and shift into pots 2 inches larger when the pots become filled with roots. Water only moderately after potting, increasing the supply with the growth.

**POTTING CARNATIONS (Idem).**—Shift them into their blooming-pots early next month, and stand them out of doors on ashes in the position you name, protecting them from frost by the Hessian canvas as you propose until the end of May, when it may be dispensed with.

**PLANTS FOR SHADED ROCKWORK (Idem).**—Your rockwork being very shady and overhung by trees few plants will succeed in it, except *Vinca minor*, major, and the variegated sort, elegantissima, the different kinds of Ivy, London Pride (*Saxifraga umbrosa*), with some of the more hardy kinds of Ferns, as *Lastrea Filix-mas*, *Athyrium Filix-femina*, *Lastrea dilatata*, *Elaeagnus Spicata*, *Polypodium vulgare*, and *Polysetichum acaule*.

**AMERICAN BLYTH IN ORCHARD HOUSE (W. H.).**—As the trees are in blossom care must be exercised in the application of the remedy, which is to mix an equal quantity of water with paraffin oil, and apply with a brush to the parts infested with the insect.

**HABROTHAMNUS AND PLUMBAGO ON BALLOON TRELLIS (W. M. B.).**—*Plumbago capensis* would be more suitable than the *Habrothamnus elegans* for this form of trellis, but either would succeed. The leaf you sent is, we think, taken from *Hoya carnea*, which you may cut down, leaving some young shoots near the base; but if only to get rid of damaged leaves, why not remove them? It would have made a better subject for the balloon trellis than either the *Plumbago* or *Habrothamnus*.

**ROW FROM A QUART OF PEAS (S. J. Rees).**—To allow for casualties, the row should be 90 feet long for the early and smooth small-seeded sorts, and 120 feet for the large-seeded and wrinkled kinds.

**PACKING FRUIT FOR MARKET (A Vicar's Widow).**—The Strawberries travel safest in boxes formed of half-inch deal. The boxes we use are 11 inches square, and 1½ inch deep inside measure. There should be a layer of leaves at the bottom, and then each fruit should be placed separately in a leaf, the fruit divided by leaves throughout, and packed closely, stuffing leaves in the interstices and over the fruit so as to prevent moving. The lids should be screwed down; and though the fruit is to be tight packed, care must be taken not to bruise it by squeezing or pressure. The Peaches are also packed in similar boxes, but 5 or 6 inches deep, so as to hold two tiers of fruit. Each fruit should be wrapped in tissue paper, and a layer of wadding (cotton wool), placed at the bottom; then put in the fruit and fill the intervals with the wadding. Put on a layer of wadding, and then another layer of fruit, filling up the intervals as before; fill the boxes with the wadding so that the lid will fit close upon it, and maintain the fruit without shaking about. Write to Messrs. Webber & Co., Covent Garden Market.

**PRUNING PLUMBAGO CAPENSIS (W. H.).**—Cut in the shoots of last year to within two or three eyes of their base, and the shoots that are required for extension to firm wood. The flowering depends on the thorough ripening of the wood in the previous year.

**CYCLAMEN CULTURE (A. J.).**—Probably you over-water the plants as the blooms "die-off quickly," the bloom stems being rotted-off at their base. Give them more light and air, and water only as required to keep the soil moist, allowing it to become rather dry before giving moisture, and then afford a thorough supply. Omit the liquid manure to the weak plants, applying it only to such as are vigorous both in foliage and at the roots, and any that are very weakly would be the better of a moist and gentle heat of 50° to 55° from fire heat. Their not blooming all together is an advantage, from the succession of bloom that is secured, and though we grow dozens of plants there is some difference in the flowering of the same variety in the same temperature and under the same treatment.

**BOXES ON FLUE BURN (A Subscriber).**—The boxes taking fire will not affect the Vines when dormant or only in bud, if the heat was not so great as to burn them, which we hardly think it would be unless the boxes were very near the Vines. The temperature for Vines showing fruit should be 55° to 60° at night, and 65° by day from fire heat, with a rise of 10° to 15° with sun and air. When in leaf and the bunches are developing, the temperature should be raised 5° on all the temperatures named, and 10° when in flower.

**DESTROYING GREEN APHIS (Idem).**—The best remedy is to choose a calm evening, shutting the house up closely, and having the foliage of the plants dry but the floor of the house wet, then fill it with tobacco smoke, taking care not to give it so strong as to injure the young tender leaves of the Vines.

**HYACINTHS FAILING (J. H.).**—The bulbs were no doubt injured by their forward condition when received, which was aggravated by placing them immediately on potting in a forcing house in a moist atmosphere, and probably water overhead, which caused the flower spikes to rot. They should have been kept in a cool house for a month or six weeks to allow of their forming roots before the tops were much advanced, and then if brought on gradually we think they would have succeeded. They are now of no value but to plant out of doors in the borders in a sheltered position, where they may recover and bloom another year; but as they have not made any roots, it is doubtful if they are of any use.

**JOINTING COVERS OF FLUE (Idem).**—The best material we have used is Portland cement, which should be mixed with an equal quantity of sand, the cement being fresh.

**ZONAL PELARGONIUMS PROPAGATING (An Old Subscriber, W. H. B.).**—The treatment you are giving is quite right as regards the putting-in of the

cuttings and the watering, which should only be sufficient to keep the soil moist; but you want an increase of heat, which should be 55° to 60° at night, and 65° by day from fire heat. The soil, we presume, is a sandy loam with a little leaf soil intermixed, and the seed at the base and around the cuttings as you mention. Too much moisture would cause them to damp, and too little to dry up. Just moist is the condition to aim at.

**SELECT DAHLIAS (Subscriber).**—*Show*:—Florence Pontin, Herbert Turner, Prince Arthur, Andrew Dodds, Annie Neville, Caroline Tetterill, Charles Backhouse, Charlotte Doring, Criterion, Edward Spary, Fanny Purchase, Harriet Tetterill, James Cocker, John Harrison, King of Primroses, Leah, Lord Derby, Memorial, Mrs. Henshaw, Netty Buckell, Prestender, Sam Taylor, Toison d'Or, Vice-President. *Fancy*: Laura Haslam, Alice Purchase, Fanny Sturt, Flossie Williams, Jenny Deans, Leopolda, Mrs. Saunders, Norah Creina, Pauline, Pluto, Richard Deau, Sam Bartlett, Starlight.

**PLANTS FOR ALCOVE (Cornubia).**—For covering the wirework of the alcove we advise *Lophospermum Hendersoni*, *Cobaea scandens variegata*, *Manradia Barclayana*, *M. Barclayana alba*, and *Tropaeolum canariense*, which will give colour, also *Gesnerium Ball of Fire*, scarlet. These would cover the wirework; and for the basket or box we should have Ivy-leaved *Gesnerium Silver Gem*, pink flowers; and *L'Elegants*, white flowers; adding a few plants of some scarlet-flowering kind, as *Vesuvius*. The plants, after they fill the box with roots, may be watered with weak liquid manure.

**TIME OF GRAPE RIPENING—PRODUCE OF VINES (C. S.).**—The Vines started in February ought to produce ripe Grapes at the end of July and early in August, but you may have a few bunches ripe at an earlier period—say the middle of July, if you have early-ripening kinds, as *Sweetwater*, *Hamburghs*, or *Frontignans*. One pound weight of Grapes for each foot length of rafter occupied by the Vines is a fair calculation, and as much as they ought, on an average, to be allowed to carry. You will be able from these data to calculate the weight of Grapes your Vines ought to produce.

**OSTEOSPERMUM MONILIFERUM CULTURE (C. M.).**—It is a greenhouse yellow-flowered evergreen shrub, originally from the Cape of Good Hope, attaining a height of 3 to 4 feet, and flowering in summer—about July. A compost of two parts sandy fibrous loam and one part sandy peat will grow it, affording a light airy position. Good drainage and moderate watering are useful.

**NAMES OF FRUITS (Subscriber, Wyseide).**—Minchall Crab. (*W. Taylor*).—Reinette Blanche d'Espagne.

**NOTES OF PLANTS (G. G.).**—Your flower is *Cyclamen persicum*. There will be notes on its culture in our next number. (*D. B.*)—The specimen was not in good condition for identification. It appears to be *Antholyza coccinea*, a very pretty Iridaceous plant, flowering in a greenhouse from February to April.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### CLUB ROW, THE FANCY AND ITS VOTARIES.

[MANY of our readers must be unaware that "Club Row" is in Church Street, Bethnal Green, and a newspaper correspondent, speaking of its vicinity, says, "Among its inhabitants are street-vendors of every kind of produce, travellers to fairs, tramps, dog-fanciers, dog-stealers, sharpers, shop-lifters, and pickpockets. It abounds with the young Arabs of the streets. Sunday is a day much devoted to pet Pigeons and singing-bird clubs, prizes being given, and a ready sale following each award."—Eds.]

To those who spend the greater portion of their lives far from the din of the city, and whose homes, it may be, are nearer to the cover of the fox than to the busy mart and crowded streets, any one of the many specialities which London possesses is heard of with interest. Nor is it to such alone. London being the head and heart of our empire, and pre-eminently great in all its characteristics, all Englishmen take pride in its greatness, and never weary reading of its wonders, and I have therefore ventured to send you these few jottings.

"Club Row on a Sunday morning" had been described to me in such terms that determined me at the first favourable opportunity to pay it a visit. Previous information somewhat prepared me, but the scene itself surpassed all I had imagined. To begin with, in Club Row and adjacent streets there are about eighty "fanciers'" shops, possibly more than that number; and as a means of comparison, when we consider that Manchester and Salford combined can only muster about half a dozen all told, this in itself excited no little surprise. All the shops, or with scarcely an exception, in the locality named seemed devoted to the same line of business. In some the atmosphere was simply unbearable, the proprietors evidently not believing "cleanliness is next to godliness." Happily there were exceptions. As regards the birds, it would have been possible to have obtained anything from a Tomtit to a Brahma cock, though I cannot say much in praise of the quality. The thoroughfares were thronged to a degree that made it difficult to thread one's way through the mass of vendors and purchasers, for the trade was not restricted to the shops. Here was one with a poor Starling tied to his finger with a bit of string; another with a small basket or tray of groundsel; there a man with an odd rooster under his arm, others with Pigeons, and even down to a poor Sparrow.

Last, but not least, the fanciers themselves; and sad to say, did we require to find human beings the lowest in the social scale, I verily believe they are to be found in the scene I have attempted to describe. Dickens's description of "the young

noblemen at Dotheboys Hall" occurred to me more than once, and as I write I see again the "pale and haggard faces, lank and bony figures; children with the countenances of old men, some young lives which from the earliest dawn of infancy had been one of horrible endurance of cruelty and neglect. There were faces which should have been handsome darkened with the scowl of sullen dogged suffering." And amid all this a banner with a scriptural text borne by a few supporting a street preacher, and as the various sounds catch the ear I find mixed with the hymn of praise the bitter curse of the drunkard and the foul oath of the blasphemer. It was a scene I shall not soon forget; and as the carriage rolled along westward, and the contrast became greater, thoughts arose to me especially of the young children, children who from the force of circumstances, and from no cause of their own, have been nursed in the lap of vice and misery, and are left there by those who are quarrelling how they should be taught.—W. H.

### CONDITION.

As I am the correspondent to whom Mr. Wright alludes, I wish to repeat exactly what I wrote on this question, page 427 of your last volume:—"Mr. Wright, or the judges, set too high a value on 'condition'; it is the easiest point to attain, and consequently of the least value." Observe, I do not say, as Mr. Wright would make appear, that condition is easily attained under adverse circumstances, but simply that there is no point taken into consideration by judges so easy of attainment. For my own part, I know of no point of colour, form, or style so easily attained. If Mr. Wright does, perhaps he would name it. Will not any poor woman, who can give her fowls a sufficiency of food and a proper roosting place, have them in unexceptionable condition if they have but the run of the roadside in the country? and still "condition," which any bird having food and liberty is sure to possess, is valued by Mr. Wright at twelve, and in some cases fifteen marks, being about an eighth or a sixth of the whole; in many instances at a higher, and in some at double the value of points of colour and form that are very difficult to attain. Look at the multitude of Game cocks that are annually sent to Birmingham—the *élite* of thousands, on whose breeding and rearing experience, thought, care, and money have been expended profusely—nineteen-twentieths of them are in blooming condition, but scarcely one-twentieth of them are to be found in the prize list. Under such circumstances should the first and cup cock, the best bird of the year, winner of several first prizes and cups, be passed over three months later, simply because he is out of condition, having gone through an amount of fatigue consequent on travelling, close confinement, constant change of food, bad air day and night, and an incessant worry whilst at shows from 7 A.M. to 10 or 11 P.M., that would kill many birds; to the advantage of a bird in perfect condition, but in other respects not within several degrees of being equal to him, a bird that probably was fourth or but "highly commended" in the same class with him at Birmingham? I think otherwise, so I hold to my opinion that the intrinsic value of a bird depends on perfection of colour, form, style, and quality of feather, and that as condition is no part of a bird it is of the least value, and the last point that should be considered.—O. P. H. Z.

### FEEDING FOWLS AT SHOWS.

On reading your report of the late Show at Northampton, I noticed that you attributed the listless manner of many of the Game Bantam cocks exhibited there to overshowing. This was incorrect. Most of the birds were certainly not well, and did not look at all up to the mark; but the real cause was the indiscretion of the Committee or their poultry attendants in feeding the birds, Indian corn and barley being profusely distributed in their pens, and the birds were not able to digest their food, consequently causing many of them to be crop-bound.

I feel satisfied that committees of shows do not pay sufficient attention to the feeding of all kinds of poultry committed to their care, and if they gave the matter more of their consideration, it would inspire exhibitors with increased confidence.—W. FORRESTER ADDIE, 45, Fishergate, Preston.

### DORCHESTER POULTRY SHOW.

In a report of this Show in your last week's number a correspondent says that my pen of coloured Dorkings there showed signs of over-exhibition. Out of condition they may have been, but overshadowed they certainly were not, as this particular pen has only been once shown since the beginning of last December. As may be supposed, I agree with your correspondent in preferring my pen to the winners, as the cock in this pen had but one eye! but in size, which always must be the chief point in Dorkings, provided they are fairly perfect, I was well beaten. As to colour, I believe it is fully understood that for exhibition "Coloured" Dorkings should be dark, in order that both in cocks

and hens they may be easily distinguished from Silver-Greys.—T. C. BURNELL, *Junior Army and Navy Club, Pall Mall.*

### SEATON BURN POULTRY SHOW.

The following awards were made at this Show, held on the 14th inst. :—

**DORKINGS.**—1 and 2, W. Swann, Hirst Head, Bedlington.  
**COCHIN-CHINA.**—1 and 2, J. Webster, West Sleekburn. 2, A. M. Balmer, Bishop Auckland. *hc.* J. Cairns, Seaton Burn.  
**BAHMA POOTRAS.**—1 and 2, W. Swann. 3, Gillis & Anderson, Seghill. *hc.* G. Stalker, West Sleekburn; E. Moore, East Rainton; R. Shield, Swaiwell.  
**SPANISH.**—Black.—1 and 2, W. Johnson, Burradon Colliery. 3, R. Shield. *hc.* Moore.  
**GAME.**—Black-breasted and other Reds.—1, Miss M. J. Nelson, Cockshaw, Hexham. 2, T. Middlemiss, Seaton Delaval. 3, C. Smith, Dudley Colliery. *hc.* J. Morton, Choppington Colliery; T. Young, Morpeth; J. Rubshaw, Wrixley, York. *Duckwings and other Greys.*—1 and 3, G. Taylor, Bedlington Colliery. 2, J. Morton. *Any other variety.*—1, J. Brown, Seghill. 2, J. Wilson, Seaton Burn. 3, T. Golightly, New Delaval. *hc.* T. Golightly; W. Drysdale, Longbirt (2); W. Wilkin, Dudley Colliery.  
**HAMBURG.**—Silver-pencilled.—1 and 2, G. Stalker. 3 and *hc.* E. Moore.  
**Golden-pencilled.**—1, A. Harburn, Bishop Auckland. 2, G. Stalker. 3, T. Marshall, Miford Vicarage, Morpeth.  
**HAMBURG.**—Silver-pencilled.—1, J. Laws, West Sleekburn. 2 and 3, R. Moore. *c.* J. Wilson, Shankhouse. *Golden-pencilled.*—1, J. Robshaw, Whitley, York. 2, A. Stephenson, Dudley Colliery. 3, E. Walker, Hexham. *hc.* A. G. Mitchell, Bishop Auckland; E. Moore.  
**ANY OTHER VARIETY.**—1, R. Parsons, Sleekburn Cottage. 2, R. H. Ashton, Mottram. 3, A. M. Balmer, Bishop Auckland.  
**ANY VARIETY.**—Cock.—1, A. Stephenson. 2, T. Golightly. 3, T. Dodd, Seaton Burn. *hc.* W. Stewart, Dudley Colliery; J. Robson, Dudley Colliery; T. Young, Morpeth. *Hen.*—1, G. Taylor. 2, T. Young. 3, W. Swann. *hc.* E. White, Cockshaw, Hexham.  
**GAME BANTAMS.**—Black-breasted and other Reds.—1, A. Hays, Bedlington. 2, H. Sharp, Gelside. 3, Miss M. J. Nelson. *hc.* J. Short, Bedlington; J. Donlass, West Sleekburn. *Any other variety.*—1, Miss M. J. Nelson. 2, T. Rennison, Seaton Delaval. 3, T. Golightly. *hc.* T. Rennison; R. White, Cockshaw, Hexham; T. Keaveley, Bedlington Station.  
**BANTAMS.**—1, Miss M. Parsons. 2, R. H. Ashton. 3, A. G. Mitchell, Bishop Auckland. *hc.* W. Race, East Brnnton; G. Stalker, West Sleekburn; R. H. Ashton. *Cock.*—1, J. Short. 2, J. Morton. 3, G. Bell, North Seaton. *hc.* J. Wilkinson, Bedlington Colliery; W. C. Dawson, Whitley; G. Taylor.  
**Ducks.**—1 and 2, Miss M. J. Nelson. 3, W. Swann. *hc.* A. M. Balmer, Bishop Auckland.  
**COTTAGE CLASS.**—Bantams.—1, J. Orkney, Dinnington. 2, Fairless and Robson, Wideopen. 3, W. Connell, Seaton Burn. *Any variety.*—1, Fairless and Robson. 2 and 3, T. Dodd, Seaton Burn.

JUDGE.—Mr. J. Dixon, Bradford.

### POLYGAMY IN PIGEONS.

As hearing on the subject named by "ONUS PROBANDI" in the Journal of February 12th, I send you an account of the following facts. A common Ash cock of mine was mated with a common Blue Chequer hen, and they had a young one in the nest which died at about a fortnight old. I had, among others, an unmated Blue Chequer hen, which if possessed among two or three dozen more of the same kind by a Lancashire dealer would be called "A Rock fra Lancashire (Lincolnshire) fur shootin'," but which, I suppose, is a Chequered Dovecote Pigeon. I had it from a farm in Herefordshire. The Ash cock is a very merry bird, and upon the death of his young one he was soon ready to go to nest again; and finding his own hen (which we will call the Blue Chequer) was not of the same mind, he turned his attentions to what we will call the "Rock." This seemed to rouse the jealousy of the Blue Chequer, and in a short time she laid him two eggs, which he helped to sit regularly, but when he was not sitting he employed his time in nesting or flying with the Rock. In due time the eggs laid by the Blue Chequer were hatched, and the young ones reared, the Ash helping to feed them. Both were Blue Chequers, but with a decided likeness in the head, beak, and general shape to the Ash cock. Before these young ones were able to fly about the Rock laid two eggs in another nest, built for her by the Ash cock, and he helped her regularly to sit, but when he was not sitting he employed his time in nesting and flying with the Blue Chequer (whose young ones could now feed themselves), and as a result she laid him two eggs about six days after the Rock.

And now his work began; he helped both hens to sit, and I seldom saw him fly about outside. Yesterday, March 8th, both of the Rock's eggs hatched; but until the young ones grow larger I shall not be able to prove that the Ash helps to feed them, though I have seen him sit over them.

I have examined the eggs of the Blue Chequer, and found one "addled"—no formation whatever having taken place, and I am now waiting for the other egg to hatch, when it will be interesting to observe whether the Ash cock helps to feed both nests, and also what likeness the progeny bear to him when full-grown. I say it will be interesting to observe what likeness both lots of young ones bear to him when full-grown, as I lately had a case in which a hen, that had been a long time unmated, laid two eggs (while yet unmated), one on the floor, the other on the shelf. I put them under a pair I had sitting, and two young ones were hatched and reared, which when full-grown bore an unmistakable likeness to a certain cock I had, which had a mate and young ones of his own at the time. I only regret that it has not occurred among fancy breeds where parentage could have been traced without any doubt, inasmuch as the characteristics of distinct fancy breeds are so much more marked than those of

the Homing Antwerp type, which is the sort I keep.—HARRY KNOWLES, *The Woodlands, Heaton, Bolton.*

### CRYSTAL PALACE BEE AND HONEY SHOW.

THE letter of your correspondent, "T. Bagshaw," seems to me to convey such an entirely different construction of the published schedule of the forthcoming show of apianian produce, &c., at the Crystal Palace, from the one evidently intended by the promoters, that I hope you will insert in reply thereto the opinions entertained by others. The covert allusions as to the framing of the classes to meet special cases at present existing, seem to me so very unjust, and so calculated to injure the object with which the Show is identified—viz., the advancement of all branches of apiculture, that I cannot refrain from opposing my opinions to those of your correspondent.

First, as to the amount of the prizes being likely to hinder competition, especially of those from a distance. I am of opinion that the majority of exhibitors from all parts of the country will be amateurs, to whom the money value of the prize will not be so much an object as the honour of distancing all comers in the particular class in which they elect to enter for competition; and even if that were not so, the owner of any apiary can exhibit in so many classes with a probability of success, should he be a fairly skilful apiculturist, that the aggregate value of the prizes he may hope to secure will induce him to enter all his best productions, whether hives, bees, or honey.

With regard to the definition of the hives, surely "the most improved" will be that which in the opinion of the judges is likely to secure the best results with the least complication of construction; and as a class is provided for every kind of hive now in use, from the straw skep to the most elaborately constructed bar-and-frame hive, nothing could be more comprehensive or more likely to insure a large exhibition of hives of all kinds, whether the production of the hive-manufacturer proper, or the skilful and ingenious amateur who has "improved" any hive so as to render it more simple of construction, more easy of manipulation, or more likely to secure what we all alike desire, a good yield of honey.

Mr. Bagshaw asks why, in giving a prize for the most beautiful progeny of a queen, the queen herself is not to be taken into account? I answer, Because the most beautiful bees are oftentimes the progeny of a dark-looking unhandsome queen, whilst very handsome queens sometimes produce very ordinary bees both in looks and qualities; and as it is upon the bees that we depend for honey-gathering and storing, a fine strain of bees should not be deprived of their due because they happen to have an ordinary-looking mother.

Then, as to "the largest breed of bees." It certainly does follow that they will be able to carry more honey, but that they will be likely to consume more requires some stronger proof than Mr. Bagshaw's bare assertion. As there are only three nationalities or varieties of bees under cultivation in this country—the native blacks, the Italians, and the hybrid cross between the two, there cannot be much doubt as to what is the meaning of the words "of any nationality." In spite of the wonderment expressed by Mr. Bagshaw as to who will bring bees from abroad for the chance of winning £2, I shall be much surprised if we have not some of our famous breeders of bees upon the Continent enter into competition for the advantage sure to accrue to them from a demand for progeny from prize strains of bees likely to follow success.

For the sake of brevity I will pass over the remarks upon the honey classes from A to P, and say why I think Q has crept in. It is because it is now so well authenticated a fact that the honey harvest of any country can be so greatly increased by the use of the extractor, that it is evidently thought desirable to encourage its introduction and general use by the offer of a prize that can only be competed for by those who, recognising its utility, have adopted it for use in their apiaries. I do not think the competition in the cottagers' classes will be left to those in the neighbourhood of London alone, although there is, as Mr. Bagshaw ought to know, quite a sufficient quantity of that class near the metropolis to make a very respectable show of themselves.

I feel sure the Committee who have the arrangements for the Show in hand will be obliged to Mr. Bagshaw for the freedom of his criticisms, which are, no doubt, given in the best of spirit, if I except his allusions to the Show being evidently in the interest of fancy-hive makers, and the prize for the largest breed of bees being introduced for the purpose of rewarding the lucky owner of some monstrosity now residing somewhere near our great city, and they will feel flattered that he has been pleased to commend most of the miscellaneous classes.

In speaking of the prizes offered for essays, and first upon the fertilisation of queens by selected drones: how does it follow that the securing of such control should be "profitless and uncertain?" Is there no possibility of improving our breed of bees excepting by accident? and if there be, how can it be accomplished

excepting by controlling fertilisation? I hope there are many who are not so ready to abandon the attempt at improvement as Mr. Bagshaw seems to be, for he who never attempts will never succeed. This opinion of his seems to me to accord well with one following closely after, "I believe a common straw hive the best for honey-gathering purposes." With regard to foul brood, Mr. Bagshaw seems to have fallen into the same error as did Mr. Pettigrew, in comparing the attempt at curing foul brood to that of curing rotten eggs. How does Mr. Pettigrew know that rotten eggs cannot be cured? Has he, or does he know of anyone who has, ever tried?

It is quite evident that the cure of the diseased brood itself is not meant in speaking of "the cure of foul brood;" and I think, perhaps, the object would have been better understood had it been worded "for the best essay on the cure and eradication (prevention) of foul brood," for it must be that the treatment of a diseased hive for its restoration to health is intended. That there must be a cause for this fearful disease is certain, or all hives would be alike afflicted at some period of their existence, though what that cause is has not yet been discovered, although many of the most learned and skilful apianians have devoted, and are still devoting, their attention to a subject of such great importance to all bee-keepers. One bold writer to the *American Bee Journal* has, however, published a recipe for its eradication in the form of a food-medicine to be administered to the bees in the afflicted hive.—R. SYMINGTON.

### GENERAL BEE-MANAGEMENT—A VISIT TO MR. PETTIGREW'S APIARY.

MY object in writing this is for the encouragement of timid or amateur bee-keepers who are afraid of doing anything with their bees, who have not had the pleasure of witnessing the effects of corduroy smoke, and who are at present too timid to try it. I have read Mr. Pettigrew's "Handy Book on Bees," and I thought it was very easy reading about it, but trying it I fancied I should get too many stings, and that it was therefore altogether out of the question; but what I saw at Mr. Pettigrew's has quite altered my opinion. I dare look now any time I want at my hives, with the aid of a little corduroy smoke.

Coming to the main part of bee-keeping—viz., the practical part. Mr. Pettigrew took me to his apiary and showed me the hive he had examined and considered best, then he hove it up gently to show me the bees that were in it (I standing a short distance off), but they would not stand that long. He then got a piece of corduroy, set it smouldering, and blew some smoke inside, so that I might examine it closely. The effect of the smoke was wonderful. Instead of the bees covering the combs as at first, they ran up among them as far as they could get, making a great noise; and when they were beginning to come out again he just blew a little more smoke among them, and off they were back again. Then I was pointed out the queen cells, drone combs, and brood combs, &c. I was next taken to a good 16-inch hive; this he showed me as before without smoke and then with smoke. This hive he gave me bottom up in my hands, and I could have walked round the garden with it if I had wanted. I was then shown a few more in the same way. We were having a chat together, and I said I had never seen a queen bee, so he said he would show me one in a minute or two. It just happened that there was a very weak hive which he did not think would do well by itself, and which he was going to join to the next hive to it that evening. Mr. Pettigrew, therefore, took an empty hive of the same size and turned it bottom upwards, then he took hold of the other with his fingers inside the hive and his thumbs out (exactly as described in pages 180 and 181 of his "Handy Book on Bees,") and with three or four good shakes up and down he had them all in the empty hive. This part he generally does at night by candlelight, but he did it in the garden in the full light of the sun, so that I might see it done before I went home. He now gave them a puff or two of smoke, in the empty hive to keep them a little quiet while he looked for the queen, and picked her out and put her into my hand to look at; that was the first time I had seen a queen, and, what was better, had handled her at the same time; after that she was put back to the bees again, and a short time after he turned the hive up again to see if I could find the queen myself, which I did. I was also shown how to fasten guide combs in bives. I was next shown how to get some honeycombs out of a hive if it was too heavy for winter, or if I wanted a piece of comb out at any time. He just gave the hive a few puffs of smoke and then turned it bottom up; he told me I should have to cut it straight down with a long knife, and then cross-ways at the top, or as deep as I wanted the comb with the comb-knife as described in his "Handy Book." A hive can be smoked, turned-up, and some combs cut out, and put in its place again in less than four minutes.

Mr. Pettigrew next showed me how he feeds his bees for quickness. He picked a hive out that was rather short of food and gave it a little smoke, then turned it bottom up, and I poured some syrup on one side of the combs and then on the other. The noise of anger at the smoke was quickly stopped, and changed

to one of contentment as soon as the bees had tasted the syrup. He then put the hive back in its place and stopped the hole up to prevent the bees of the other hives from smelling it and going in, it being rather early in the afternoon.

I am sure after what Mr. Pettigrew showed me that old corduroy is the bee-keeper's best friend, and that with the aid of it the most timid bee-keeper may do what he wants with his own bees—what he would think was impossible. If the bees are very savage just give them an extra dose of smoke, it will take it out of them. In conclusion, I must say that Mr. Pettigrew handled his hives like a master, and I am exceedingly obliged to him for the trouble he took to explain everything to me.

I have to go in the swarming season to see him make an artificial swarm, which I shall do if all be well. If there are any bee-keepers that are as timid as I used to be, and I dare say there are, after reading this let them put what they have read in practice, and I can assure them they will succeed far beyond their expectations.—P. RAINFORD, *New Springs, near Wigan.*

### KEEPING BEES FOR PROFIT.

HURRAH! it is found out at last, and your contributor "J. C." shall have the honour. Here is the secret, Do as your ancestors did. Expend no capital on your bees, and if any honey is gathered, sell it, and it is all profit. Now, there are many things our ancestors did both wisely and well, and well worth our imitating, but they lived in slow times compared with ours; their requirements were less, and they were satisfied with less than we need to keep abreast of the times. We live in the days of railways and telegraphs, and it will never do for us to go back to the good old coaching days.

There can be no doubt but profit has been made by the old system of management; but is it not possible that, by a judicious outlay of a little capital, much more profit may be made? "J. C." has no cause to complain of our little pets. He sowed for amusement and instruction, and he has reaped the same, doubtless abundantly; and if he had reaped profit as well he probably would have been disappointed, because he does not appear to have aimed at it. I am going in for profit as well as amusement, and for the first I have adopted the Pettigrew straw hive, which I consider the cheapest and best adapted for either breeding purposes or storing honey. I have no doubt about that, but what particular kind of hive to try for amusement and instruction I am entirely at sea. One recommends this and another that, and most of them appear so complicated in their structure, that it seems as if the makers of them wanted to teach the bees something, instead of learning something from them.

To teach bees what to do and how to do it, appears to me a hopeless task, and I think "J. C." would find it difficult to teach them either reliance on the bottle or idleness. Like all good economists, if material is placed near them they will prefer that before going a distance to fetch it; but let the supply fall short at home, and off they go to the nearest place where it can be found. The suggestion about the small quantities of honey stored in the tropics does not prove their inactivity there, but rather their remarkable instinct, for what is the use to them of large quantities of honey stored up where it can be obtained as required?—THOS. BAGSHAW, *Longnor, near Buxton.*

### BEE-FEEDING EXPERIENCES.

In the Journal of February 19th I noticed a letter by "BEATEN BUT NOT DISMAYED," who, after narrating his experiences of how he killed a hive by kindness, sums-up by advising all amateurs to leave their hives alone and let the bees take care of themselves. I for one do not agree with him, but consider judicious assistance occasionally to be absolutely necessary to the welfare of a colony of bees. I have a case in point in which I have saved a starving stock this season.

Some time about the 15th of February last, I observed that one of my hives, a Neighbour's improved Woodbury bar-frame, had not been giving any signs of activity by the bees airing themselves for several fine days previously; and seeing there were dead bees inside close to the entrance, which would not have been the case were the occupants in a prosperous condition, and being unable to hear any humming when I rapped on the hive, I suspected something wrong. I accordingly decided to open the hive for inspection, much as I dislike interfering with bees in cold weather. The result proved my conjecture to be correct—viz., that the bees were without honey. They were starving, many of the bees having entered the cells, and not a morsel of honey in the hive. At first I thought they were all dead, but on withdrawing the frames I observed a tremulous motion of the wings of some of the bees; so wishing to try whether I could save them, though by no means sanguine of success, I shook any dead bees off the floor-board and frames, quickly replacing the latter; fastening the lid I carried the hive into my viney, average temperature 60°, first taking care to close the entrance-hole; then withdrawing the zinc slide in the lid I

put a large bee-glass over the hole, and left the latter open to allow the bees access to the glass if the heat should revive them. This was about midday, and I observed no signs of life till the following morning, when some dozen bees had made their way up in the glass super, crawling about in a sluggish manner, and on tapping the hive a slight answering hum could now be distinctly heard. I then took a cake of sealed-up honey-comb about 2 lbs. in weight, and opening a few cells I placed it under the glass super. It was an hour or two before the enfeebled bees began to taste the honey; when they did, however, it was wonderful in how short a space of time the news that a supply of food had been discovered became communicated to the rest of the occupants of the hive. Bees commenced running about instead of crawling, their numbers in the super hourly increasing, and by the evening the whole hive seemed awake. I covered-up the super and left them, and on the following morning when the sun was fairly warm I replaced the hive on its old stand, still leaving the entrance closed till the evening, when I opened it.

The next morning from the cold of the night the bees had quitted the super, and on inspecting the comb they had cleared-out every drop of honey. I then made some liquid food by boiling good beer and brown sugar together for a few minutes, in the proportion of three-quarters of a pint of ale to 1 lb. of sugar, adding a tea-spoonful of salt, and when cold a small dessert-spoonful of rum. This I gave in one of Neighbour's circular wooden feeders (not those with a float), with a sheet of glass over the top, putting a few chips of straw in the groove into which the food passes to prevent the bees falling into the syrup and being drowned.

They soon ascended into this and began to convey down the syrup, and as the day got warmer began to carry out their dead, so I no longer despaired of their having recovered, provided the queen was uninjured. I still keep on the feeding at the top, and for the past week or more the bees have been hard at work bringing-in pollen on their legs whenever the days were warm. Of this they can get a good supply, as we have any quantity of *laurustinus* in full blossom, which is a great help to early breeding. From this latter sign I have little doubt that the queen is in safety, and the hive has probably ere this some brood in it.

Had it not been for the letter of "BEATEN BUT NOT DISMAYED," I should not have thought of writing to you on this subject; but as his failure may make other inexperienced aparians follow his advice and leave starving stocks of bees to their inevitable fate, I send you this, in hopes, if you deem it worthy of insertion, that it may encourage judicious feeding at proper times and save the lives of many a starving colony.—WILLIAM SAVILE.

MR. CHARLES RAYSON.—With much regret we have to announce that this good and honourable judge of Rabbits died on the 3rd inst. at his residence, Ivy Lodge, Didsbury, near Manchester.

CONSUMPTION OF EGGS.—Farmers, cottagers, every dweller in the country, ought to breed poultry, for the demand still increases. In February the value of eggs imported was £151,665; in the corresponding month last year, £147,822.

### OUR LETTER BOX.

DORKING AND BRAHMA CROSS (*Subscriber*).—The Dark Brahma is generally preferred, because the colours harmonise better with the Dorkings. There is no difference in the merit of the two breeds.

FEATHER-EATING FOWLS (*Rusticus*).—The deplorable habit of picking the feathers is generally acquired in confinement. We have never known it among birds that were at liberty. It arises from the lack of something they would get if they were at liberty, and the feather is the nearest approach to that for which they have the natural craving. Spanish are very prone to it. We have never been able to cure it entirely, but we have lessened it by supplying them with fresh horse dung, lumps of growing grass, with plenty of fresh earthworms and lettuce.

POULTRY MANAGEMENT (*D. E. P.*).—You must alter your feeding and come more to natural food. Potatoes in every form are bad. Give in the morning ground oats or barley meal mixed with cold water, midday alternately whole maize or barley; evening same as morning. In the small space they have, give grass, earth, garden rubbish, and lettuce if you have it. Your birds are overfed, and probably too fat. They want something that will amuse them. Three meals per diem are enough. The space is too small for Dorkings. None will do better than Brahmas. It is difficult to cure hens of egg-eating; you may lessen it by putting hard composition eggs in the nests, and by laying one or two about in their run. It is almost incredible that your Brahmas have not yet laid.

AYLESBURY DUCKS MOULTING (*Attic*).—Your Ducks should have laid before this. We cannot account for their moulting. Is it all over the body, or in parts? If the latter, in what parts?

PARTRIDGE COCHINS' PLUMAGE (*A. B. C.*).—The principal points in Partridge Cochins are in the cock scrupulously black breast, black and orange-striped saddle and hackle, no white anywhere. The hen should be Partridge or Grouse-feathered all over, without yellow tinge, and the feathers more marked than those of a Game hen. Condition makes a cock's plumage glossy. Many fanciers think a few white peas daily are beneficial.

PRODUCE OF EGGS (*Pullet*).—Like most of these who complain they get no eggs, you are overfeeding and giving improper food. Your birds are too

fat, and cannot lay. Alter it altogether. Give them ground oats or barley meal mixed with cold water in the morning; whole corn, maize, or barley varied with kitchen scraps in the afternoon; and meal again in the evening. Discontinue all the rest, and you will have eggs.

**ROVEN DUCKS (F. G. S.).**—The Roven is not an early-laying Duck. Give them oats instead of barley. They will soon lay. The question of shooting fowls that trespass is a vexed one. We should say the legal remedy would be an action for damage. Fowls are not particularly fond of peas, but they like to scratch in the earth, and then eat all they find in the way of food. You can stretch wire along the hedge. We have done so successfully. We could give you a better opinion if you told us their breed.

**TURKEYS (P. H. Mold).**—How many hen Turkeys have you? One cock will suffice for many hens, and an extra one is rather a hindrance than otherwise. We do not believe it will seriously interfere with the fertility of the eggs. A young Turkey cock is not always to be depended upon, and in your place we should be unwilling to dispense with the services of the tried one.

**LIME-WATER FOR PRESERVING EGGS (A. B.).**—Sufficient lime should be put to form a paste in which the eggs will retain the position in which they are placed. They should be put in as laid till the layer is complete. When that is the case, another bed of lime is made, and eggs put in, so on till the vessel is full. We always use bread-pans. We have done so for years, and have never found a cooked one. They must be put in fresh, and new-laid so much the better.

**CHICKEN DIARRHŒA (R. E. H.).**—Your chickens are chilled. Give them ale to drink—good ale, not table beer. When they return to their artificial mother at night give some stale bread soaked in ale. Feed on boiled egg, bread and milk, chopped cooked meat, and let them have good turves with plenty of earth to them. They want no other food, but they must be fed very often, and above all, at daybreak. Rice may be given as a change if they seem dissatisfied, but it is not good food.

**ROUP (L. A. B.).**—If the hen be suffering from roup the swelling will be soft to the touch, and the accumulation in the mouth and throat will partake more of the nature of mucus than cheesy matter. If it be roup it may be cured, especially at this time of year; and stimulant given at once in the form of bread steeped in strong ale, will be beneficial. If a cheesy swelling, there is no cure for it.

**WHITE LEGHORNS AS LAYERS (Nemo).**—One cock and ten hens were confined all the warm season in a moveable coop 4 feet wide and 10 feet long; the rest were kept under a barn, and had their liberty perhaps one-third of the time.—December, 1871, No. of hens; 24; cocks, 2; eggs, 577; eggs per hen, 15.7. January, 1872, hens, 21; cocks, 2; eggs, 452; eggs per hen, 21.5. February—hens, 21; cocks, 2; eggs, 427; eggs per hen, 20.3. March—hens, 26; cocks, 2; eggs, 500; eggs per hen, 18.9. April—hens, 99; cocks, 3; eggs, 455; eggs per hen, 14.8. May—hens, 27; cocks, 3; eggs, 560; eggs per hen, 20.7. June—hens, 27; cocks, 3; eggs, 466; eggs per hen, 17.3. July—hens, 27; cocks, 2; eggs, 445; eggs per hen, 16.5. August—hens, 26; cocks, 2; eggs, 507; eggs per hen, 19.5. September—hens, 26; cocks, 2; eggs, 403; eggs per hen, 15.6. October—hens, 25; cocks, 2; eggs, 327; eggs per hen, 9.8. November—hens, 24; cocks, 2; eggs, 235; eggs per hen, 13.0. Total for each year—eggs, 5147; total for each hen, 203.6

**PETROLEUM (G. A.).**—What druggists sell as Barbadoes tar, Petroleum barbadense. We have never tried it, never having had chickens affected with gapes. Cleanliness, nourishing food only, and a lump of camphor in the water the chickens drink, will usually prevent gapes.

**NORTHAMPTON PIGEON SHOW.**—We are informed that, owing to the neglect of the railway company, Mr. Townson's birds were not delivered until after seven o'clock on Tuesday March 3rd, the Judges having left the hall several hours.

**TRUMPETER PIGEONS.**—In THE JOURNAL OF HORTICULTURE, March 12th, Mr. Frederick Ivy (Joy), Walmgate, York, offers for sale an English Trumpeter, "Prince Charlie," and says, "winner of many prizes, beating Mr. Fulton's and Mr. Lederer's foreigners." Now, I beg to say that none of my Trumpeters has been beaten by the above English Trumpeter. The lists of awards of the shows where I exhibited will prove that.—J. LEDERER, Boodle, near Liverpool.

**CANARY'S SONG BEING INJURED—CAYENNE FEEDING (M. B.).**—You need be under no apprehension as to the bird's song being injured. If it is a trained German songster, it should not be within hearing of the noisy song of an ordinary Canary. That would injure it, as it would copy some of the head-splitting notes. It might be that during the breeding season, when birds are, or ought to be, in the highest possible condition and most robust health, a trained songster might not always feel disposed to warble his varied accomplishments and operatic selections to his innamorata; but might, in the exuberance of his joy, speak in a language she might understand more plainly; and I don't know whether, under such circumstances, he would not sing the "proud song." Nature has taught him; but the breeding season being over, and things returned to their normal condition, there can be no fear of his not returning to his more chaste melodies. The cayenne food must be given fresh every day. Nothing is more injurious to birds than sour food. Fear in mind, it must only be given during moulting, while the blood is in circulation in the feather.—W. A. BLAKSTON.

**CANARIES GOING BLIND (W. Smith).**—A disposition to blindness is not among the diseases to which Canaries are liable. Isolated cases may and do occur, but what I mean is that no breeder regards such a calamity as one of the many difficulties he has to contend against, and it is not one of those things for which any cure can be prescribed. Still, every effect has a cause, and if you have ten per cent. of your stock so affected, I should advise you first to remove the blind birds into a separate cage, and notice whether they are temporarily or permanently blind. Keep a sharp look-out for fresh cases, for it evidently is some infectious form of ophthalmia. Hold a council of your most intelligent friends among the fancy, and see if any local cause can be discovered. You do not say anything of the symptoms, whether accompanied by inflammation or other outward signs of the mischief working. Perhaps other breeders who may have met with a similar scourge will "relate their experience."—W. A. BLAKSTON.

**BULLFINCH AND CANARY BREEDING (Ashantee).**—Try them, if you are disposed for so experimenting, but the result of all previous attempts has shown the endeavour to be futile. If you search the index of the Journal for 1873, I think you will find some very definite information on the subject, furnished me by Mr. Forth, of Pocklington. I am afraid you will find it a waste of time.—W. A. BLAKSTON.

**CANARY ILL (Canary).**—By this time your patient will probably have gone to the happy hunting grounds. He is in the last stage of pulmonary disease. The aggravated symptoms may be, to some extent, alleviated by keeping the

bird near the fire. Feed on bread-and-milk and a little maw seed. Give a drop or two of cod-liver oil, either floated on water or by dropping it into his throat from a pointed stick; but he will go.—W. A. BLAKSTON.

**REMOVING A HIVE (G. G.).**—You may safely remove your hive six miles on a light cart or other conveyance with springs; or it could be swung on a light pole and carried between two persons, or one may easily carry it on his head the whole way. Close the door of the hive with tow or rags, and tie the hive tightly to the board before it is sent off.

**OFFAL THROWN-OUT BY BEES (W. E. M.).**—The dead bees you have sent for inspection are all young and imperfect. Those in parcel a died in their cells after they had reached their pupa or chrysalis state. That in parcel b has not been matured, but has either left its cell or been taken out by the bees about two days before its time of hatching. That in parcel c has apparently been twenty-one days in its cell, and therefore is not an abortion. Doubtless it was either diseased or imperfect when cast out of the hive. For a day or two after they are hatched bees are of a light grey colour like that in parcel c. What you have witnessed is of common occurrence in healthy prosperous hives. Many young bees lose their foot-hold of the combs, and fall on their boards where they become chilled. Not having sense to crawl back into a warm place they soon lose the power to do so. Your treatment of your bees is quite correct.

# METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.  
Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
1874.	Barome- ter at 32° and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.		Radiation Temperature		In. sun.	On grass	
March.		Dry.	Wet.			Max.	Min.	deg.	deg.			
We. 11	29.957	28.1	27.3	N.W.	39.8	36.5	21.9	8.5	20.1	—	—	
Th. 12	30.225	30.0	29.1	N.W.	37.6	42.0	24.6	61.4	22.6	0.082	—	
Fri. 13	30.984	37.2	35.8	N.W.	37.9	47.2	29.5	74.4	26.1	—	—	
Sat. 14	30.508	46.0	42.6	N.W.	39.4	53.5	36.5	88.0	35.5	0.030	—	
Sun. 15	30.310	49.3	46.5	N.W.	41.1	54.0	41.2	80.1	38.8	—	—	
Mo. 16	30.311	48.6	46.1	W.	42.3	55.2	41.4	79.2	40.6	—	—	
Tu. 17	30.218	49.2	47.8	W.	43.4	56.2	45.2	70.6	43.9	0.060	—	
Means	30.273	41.2	39.4		40.0	49.2	34.3	76.6	32.5	0.170		

## REMARKS.

11th.—Snow on the ground and extremely cold in spite of bright hot sun. It was nearly 50° hotter in the sun than in the shade.

12th.—Dull early and very cold; heavy snow from 8.30 A.M., lying about 10.30 A.M. nearly 2 inches deep; faint sun about 1 P.M., and thaw. Drizzle at night.

13th.—Fair, but not a bright day.

14th.—Fine throughout, with hot sun at times.

15th.—Dry but dull; much warmer.

16th.—Fine warm morning, cloudy at times during the day; fine night, and windy.

17th.—Rather dull, cloudy, with tendency to rain; slight shower for a few minutes at 10 P.M.

Owing to the week embracing both very cold and also warm days, the average temperatures are unaffected, but so cold a day on March 11th should not pass unnoticed. Low as the temperature fell here, it was far lower in other parts of the country, and on grass in north-west Yorkshire actually fell below zero —i.e., more than 32° below freezing.—G. J. SYMONS.

## COVENT GARDEN MARKET.—MARCH 18.

RATHER more inquiry has prevailed among the dealers during the past week for articles of choice descriptions, and prices have correspondingly advanced, although not to much extent. We may, however, now reasonably expect soon to have a revival of the usual spring demand. Some new hot-house Grapes are in the market selling at 2s. the pound. Strawberries a very dull trade.

### FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	0	0	Mulberries.....	1	0	0	0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	1	0	0	0	Oranges.....	100	4	0	12
Chestnuts.....	1	0	20	0	Peaches.....	doz.	0	0	0
Currants.....	1	0	0	0	Pears, kitchen.....	doz.	2	0	0
Black.....	doz.	0	0	0	dessert.....	doz.	3	0	10
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	5	0	0
Filberts.....	lb.	1	0	6	Plums.....	doz.	0	0	0
Gooseberries.....	lb.	1	0	6	Quinces.....	4	0	0	0
Grapes, hothouse.....	lb.	3	0	0	Raspberries.....	lb.	0	0	0
Lemons.....	100	4	0	12	Strawberries.....	1	0	2	0
Melons.....	each	0	0	0	Walnuts.....	100	2	0	16
					ditto.....	100	2	0	2

### VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	8	0	0	Mushrooms.....	pottle	1	0	2
Asparagus.....	100	4	0	10	Mustard & Cress.....	punnet	0	2	0
Beans.....	12	0	0	0	Onions.....	bushel	4	0	7
Beet, Red.....	100	2	0	0	pickling.....	quart	0	6	0
Broccoli.....	doz.	1	0	6	Parsley per doz. bunches	4	0	6	0
Cabbage.....	doz.	1	0	6	Parsnips.....	doz.	0	3	1
Capsicums.....	100	0	0	0	Pess.....	quart	0	0	0
Carrots.....	bunch	0	0	0	Potatoes.....	bushel	8	6	4
Cauliflower.....	doz.	3	0	0	Kidney.....	do.	0	0	0
Celery.....	doz.	1	0	2	Round.....	do.	0	0	0
Coleworts.....	doz. bunches	2	6	4	Radishes.....	doz. bunches	1	0	1
Cucumbers.....	each	1	0	2	Rhubarb.....	bundie	0	9	1
pickling.....	doz.	0	0	0	Salsify.....	bundie	1	0	0
Endive.....	doz.	3	0	0	Savoy.....	doz.	1	0	2
Fennel.....	bunch	0	0	0	Scorzoneria.....	bundie	1	0	0
Herbs.....	bunch	0	0	0	Sea-kale.....	basket	1	0	3
Horseradish.....	bundie	3	0	4	Shallots.....	lb.	0	9	0
Leeks.....	bunch	0	0	0	Spinach.....	bushel	2	0	3
Lettuce.....	doz.	1	0	4	Tomatoes.....	doz.	0	0	0
					Turnips.....	bunch	0	3	0
					Vegetable Marrows.....	doz.	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 26—APRIL 1, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
26	Tu	Meeting of Royal Society, 8.30 p.m. Cambridge Term ends. Oxford Term ends. PALM SUNDAY.	Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days	m. a.	
27	F		51.8	32.6	42.2	16	51 a f 5	21 a f 6	0 11	51 3	8	5 46	85
28	S		54.1	34.1	44.1	14	49 5	22 6	after.	25 4	9	5 28	86
29	Su	Meeting of Institute of Civil Engineers, 8 p.m. Royal Horticultural Society, Fruit, Floral, [ and General Meeting.	53.0	34.0	43.5	17	46 5	24 6	27 1	49 4	10	5 9	87
30	M		53.7	33.4	43.6	13	44 5	26 6	40 2	7 5	11	4 51	88
31	Tu		53.7	34.3	44.0	19	42 5	27 6	51 3	21 5	12	4 32	89
1	W		55.3	33.9	44.6	18	40 5	29 6	0 5	33 5	13	4 14	90
			55.0	34.4	44.7	21	37 5	30 6	9 6	43 5	14	3 56	91

From observations taken near London during forty-three years, the average day temperature of the week is 53.8°; and its night temperature 33.8°. The greatest heat was 75°, on the 27th, 1839; and the lowest cold 16° on the 1st, 1838. The greatest fall of rain was 1.19 inch.

## GIVING AIR.



WHEN a young gardener has learnt how to give air properly to plant and fruit houses, he has, in my opinion, mastered the most difficult lesson in the whole of his very difficult profession. To give air properly means much more than merely to give air when a house rises to a certain temperature; it means to give it in such a manner as to maintain a genial atmosphere, and at the same time to make the most of the solar heat and light, so that the plants may be grown in a more natural style than they are where ventilation is not properly understood, and be so hardy that none but those which naturally grow in shady positions will require shade; also that a few degrees below the regulation minimum for some hours before daybreak will not harm them. We may be certain there is something wrong somewhere if such plants as Cucumbers, Melons, or Vines require shading, unless it may be for an hour or two on a sudden change from long-continued dull weather to very bright sunshine, and we may be equally sure all is not right if on a sudden lowering of the external temperature such plants as I have named will not bear with impunity for a few hours in the night a temperature of 53° or 55°.

The best place I can think of to prove whether a man understands giving air is a house with a steep roof facing the east, and glazed closely with large panes, planted with Alicante Vines, and where the temperature cannot be raised by fire heat higher than 45°. Now, a man who understands it can grow Grapes as good as it is possible to grow them in such a structure, but one who does not possess the requisite knowledge would probably have his Vines burnt up the first sunshiny day. I have named Alicante because it is the first to show the effects of improper ventilation on the foliage; Lady Downe's and others give their evidence principally in the shape of scalded berries. It was last year recommended by a very successful Grape-grower to keep a high night temperature by fire heat to prevent this scalding. I am aware it would prevent it, and I am also aware it would encourage insects, and, besides, it would be a very extravagant plan, fit only for lazy people or those who are so afflicted that they could not move sharply for a few minutes in the morning.

To begin with: fruit houses in which the occupants are in a growing state should generally have air on night and day. In those which are not glazed closely there will, perhaps, be sufficient ventilation between the laps at night. In very cold or very windy nights there will be sufficient change of air taking place in any glass structure, however closely glazed and shut; but as a rule, fruit houses are best with just a chink of air at the top. In the morning one must be a little weather-wise, and anticipate what is coming. If it is likely to be a bright day fires must be stopped as early as possible, even though the temperature be lower than the ordinary

minimum. Air should be given without waiting for the thermometer rising more than a degree or two—a little at first, then watch a few minutes, and if the temperature is still rising give a little more air, and so on till as much air is given as is likely to be wanted during any part of the day. Never give enough air at one time to lower the temperature, always anticipate the rising. For example: say the night temperature should be 55° and the sun temperature 90° to 100°, which will suit all the plants I have named—Vines, Melons, and Cucumbers. If by chance the thermometer should only indicate 50° in the morning it will do no harm, do not wait for it to rise more than a degree or two before giving a little air, merely be sure that it is rising, and that giving a little air will not lower it. When it can be seen that it is still rising, say by the time it reaches 55°, give more air, and so on, getting all the air on that is likely to be wanted by the time it indicates 60° or 65°. When the temperature rises gradually, with abundant ventilation in this way, the atmosphere feels softer and more natural throughout the day, evaporation is not so great, and the houses do not feel so hot as the thermometers indicate them to be; plants do not flag, they have more substance in their leaves, flowers are larger and of greater thickness in the petals, the sexual organs are more fully developed, and there is no difficulty about fertilisation.

The foregoing directions apply principally to finessed weather. During the month of March, and at other times, there are days when the weather changes every few minutes, and it is very difficult then to manage forcing houses: it is scarcely possible to give directions to meet the requirements of such times, the knowledge how to act can only be acquired by practice on the spot; but speaking generally, a lowering of the temperature for an hour by a passing cloud, or a little higher rising than usual by half an hour's bright sun, will not do so much harm as is often done by giving a quantity of air suddenly at the top of the house, and allowing the soft, moist, warm air to be replaced by that which is cold and harsh. Sometimes this difficulty can be met by giving air only at the front or at one side of the house for a time, when the evaporation will not be so rapid as if the upper part of the house were open; but in practice almost every house we have to deal with requires special treatment.

—WILLIAM TAYLOR, *Longleat*.

## LAURUS NOBILIS, OR SWEET BAY.

It is much to be regretted that this fine shrub is not so hardy as some others, yet there are many places where it might be planted with advantage, and where it would be likely to answer all the purposes required of an evergreen shrub. It is certainly more hardy than most people think, for it is only now and then that a hard winter tells upon it when it is planted in a situation sufficiently dry to insure its shoots being properly ripened. Amongst a number of plants here I do not think we have lost one from the severity of the weather during the last twenty years, although, twice or thrice, most of them have been more or less injured; still they have always recovered.

In favourable seasons berries are produced, but not in sufficient quantity to be called a good crop, such as that yielded by the common and Portugal Laurels, yet in many instances they are sufficiently numerous to be conspicuous, being so plump, pretty, and perfectly black. If they were borne in as great abundance as those of the Aucuba sometimes are, the Sweet Bay would be no bad competitor to that shrub, as the berries are nearly as large, and about the same shape.

Few evergreen shrubs look better than this; its abundant foliage, thickly set on branches which in most cases point upwards, gives it a tree-like character. Neither am I acquainted with any plant not usually designated a tree that attains a greater altitude. A Sweet Bay which we have here is considerably more than 30 feet high, and of proportionate width, while many others approach that size. It is seldom that either a Portugal Laurel or an Arbutus attains so great a height, as both seem more inclined to spread, and the same is the case with the common Laurel, unless it is drawn-up amongst other trees, which is not the case with the Sweet Bay alluded to. I am not acquainted with any evergreen better fitted than this to make a tall fine hedge wherever the situation is favourable, neither do I know of any that bears cutting better, as in this respect it far exceeds the Holly. It is not equal to the latter in hardiness, but where the situation is favourable it certainly grows faster, and is capable of being trained to any particular shape.

There seem to be more varieties than one of this shrub, as is evidenced in the difference of the smell given off, some plants being almost scentless, others very fragrant. There is also a difference in the character of the leaves, some plants having them much smaller than others, while in some the surface of the leaf is undulated, in others plane, and the same as regards the edges; but in general the plant is conical, or, rather, cylindrical, sometimes approaching to an elliptical shape, but, of course, this form is not always maintained, and may be altered or improved as circumstances render necessary. To return to the cultivation. I would not advise the Sweet Bay being planted in any situation but a very dry one, and if the subsoil contains plenty of stones, and is of a somewhat calcareous nature, so much the better. In such a place the growth is often as great as that of the Portugal Laurel; and as I have said before, where the growth of the preceding season has been well ripened it seldom suffers from the effects of winter, while in wet mild autumns like that of 1860, when every shoot was charged with sap at the time hard weather set in, the injury was correspondingly severe. The plants also suffered in like manner in the winter of 1866-67, and more slightly once since that time, but in each case they recovered during the summer, and even then did not suffer more than did one or two common Laurels; the latter, however, were not growing in such a favoured position. The difference in hardiness between the two is, nevertheless, not so great as is usually thought to be the case, while the beauty of the Sweet Bay entitles it to a higher rank among ornamental shrubs and a more extended cultivation than it has hitherto had. There are few people but who admire the Sweet Bay, especially when seen in good health, and occupying a position singly on a lawn or other sheltered place. Fortunately it is one of those shrubs which require neither pruning nor any other attention of the kind.—J. ROBSON.

### GLEICHENIAS.

I HAVE read the article by "EXPERTO CREDE" on this interesting subject, and I should like to add a few lines. Possessing an unusually large collection of these charming plants, I hope to be pardoned for attempting to handle the subject, even if I occasionally differ from my friend.

He has truly said that *Gleichenias* must rank as the aristocracy of Ferns, for they possess a grace and majesty peculiarly their own. What is more striking than a fine healthy well-grown specimen? To which should the palm be awarded? Ah! to which, indeed. Showing an old friend, an ardent Fern-grower and lover, round my ferneries last week, he was greatly puzzled which of mine to select as his idea of the perfect model of grace and beauty. First of all his eye fell on a superb specimen of *G. dicarpa*, and he thought nothing could surpass it. A little further on, and *circinata glauca* put *dicarpa* in the shade; but shortly afterwards my fine *rupestris* occupied his attention, and all the others were beaten hollow. A fine race indeed. *Rupestris* first, *circinata glauca* a good second, *dicarpa* third, and the rest nowhere! But I am wandering, and will return to my real subject.

I possess about twenty specimen *Gleichenias* (I think I hear someone exclaim, "Oh, what a story the man is telling, to be sure!") and fifteen of them are very fine plants. At this period of the year there is nothing to prevent their all being grown together for a time, as a little extra warmth is a great advantage to them, and encourages their new growth after they have been thoroughly looked over, cleaned, and if necessary repotted; but ere long they must be separated. I grow all mine in good fibrous loam, silver sand, and a little leaf mould—not an atom of peat near them, and I defy anyone to produce finer plants. I wish "EXPERTO CREDE" would come and see them, for they are worth a long journey to behold even now, and two months hence they will be far finer.

*Rupestris* is not, in my opinion, a cool-house Fern. I have three plants. Two of them are in a warm greenhouse just now; the other, a most magnificent specimen, is luxuriating in a stove, which it must have to be grown thoroughly well. It is 5 feet through and 4 high, in full vigorous growth, perfect all round, and fresh as a Daisy. What will it be in June? The true *semivestita* is, in my experience, very imperfectly known, *microphylla* doing duty for it, and I have repeatedly seen it sent out in the place and name of it. They are, however, very different in appearance and habit. *Semivestita* is much stronger, the fronds larger and far more branching. Moreover, a fully developed frond forms a perfect hexagon, which readily distinguishes it from *microphylla*.

*Gleichenia circinata glauca*, or *Mendeli* so called, is a truly glorious plant, and I presume "EXPERTO CREDE" refers to it as *microphylla glauca*. My specimen is at present most lovely, in full growth, and as silvery underneath as *Cyathea dealbata*. It is extremely rare, and is not possessed by the trade, with the exception of Mr. Dixon, of Beverley, who has one plant; and I only know of one other plant in addition to my own, and they were both purchased at Manley Hall sale last year. *Furcata*, too, is even rarer, for I am not aware that it exists in any private collection except my own, though there was a plant at Kew, I believe. It is a stove Fern, most beautiful, but very shy and difficult to grow well. It seeds very abundantly, but none of the spores ever germinate; in fact, I have never raised any *Gleichenia* from seed, though I have repeatedly tried to do so.

I have eleven distinct kinds—viz., *speluncæ* of gardens and true *speluncæ* (the latter very hard to make anything of), *flabellata*, *microphylla*, *semivestita*, *dichotoma*, *furcata*, *rupestris*, *dicarpa*, *heciostophylla*, and *circinata glauca*.

I could write much about them, and I may possibly send you ere long another article, but I feel that I have already occupied more than my share of your space this week. Let me just add that when perfect drainage is secured all the *Gleichenias* require an abundant supply of water—not overhead. Grow them close to the glass, and give them now all the sun you can, provided, of course, it is not too scorching, for from such heat they must be shaded well.—T. M. SHUTTLEWORTH, *Howick House, Preston*.

### PEARS NOT KEEPING.

PEARS have kept badly this year, rotting from the core outwards. It would be useful if those of your correspondents who grow many varieties, would state which sorts have kept best. I have had no fault to find with *Easter Beurré* grown as an espalier, and not much with *Bergamotte d'Esperen* from a wall. That excellent baking Pear, *Léon le Clerc de Laval*, on espaliers has kept till now, though a few fruits have rotted. I have on several occasions observed that after very dry summers Pears are liable to go off in this way.—G. S.

### FLOWERS FOR OUR BORDERS.—No. 28.

CYCLAMEN PERSICUM PUNCTATUM.—SPOTTED PERSIAN CYCLAMEN.

THE well-merited popularity of the genus *Cyclamen*, more especially of *C. persicum*, entitles it to a prominent place in any selection of hardy window plants. True even of the typical species, it is still more so of the improved forms, with larger flowers and more varied shades, to which careful cultivation and selection have given rise. The spotted variety here illustrated is but one of many equally interesting, but will serve as a peg on which to hang a few cultural hints.

*Cyclamen persicum* is almost exclusively grown as a pot plant, and is admirably adapted for associating with early-flowering *Scillas*, *Hyacinths*, *Narcissi*, and other spring bulbs in the window garden. Supposing the amateur has purchased

a plant in bloom, the only care it will ask at his hands during its season of flowering is sufficient water and an occasional careful sponging of the foliage on both surfaces. After the flowers decline the pot may be placed in a cold frame, that it may be sheltered from heavy rainfall, and as the foliage withers water should be gradually withheld. If no frame is at hand, it may be kept in the window till June, and be then placed on its side out-doors in any convenient spot where it will be safe from vermin.

Some varieties show a disposition to retain their foliage much longer than others, and most of them can be maintained in growth if thought desirable, though we think it good practice to give the corms a season of rest. Towards the close of the summer the tubers should be repotted in a soil composed of equal parts of leaf mould, or in its place good peat, well-rotted manure, loam, and silver sand, but where all these materials are not attainable, the best substitutes that are at hand may be used. The pots may be from two to three times



*Cyclamen persicum punctatum.*

the diameter of the tuber, which should have its upper surface slightly raised above the level of the soil. Perfect drainage is of great importance, and if a thin layer of compressed moss can be laid over the crocks it will aid in keeping the soil from falling through and obstructing the escape of water. As a rule it is desirable to remove the outside portion of the old ball of soil, but in the case of large corms it may suffice to renew the surface soil. After repotting, the plant may be replaced in a cold frame or window, but little water being given until a few leaves are well developed and the flower buds begin to rise, when the allowance may be gradually increased.

The period at which the plant will commence blooming naturally depends on the temperature maintained. A tuber of moderate size will produce flowers in succession for two or three months. Some varieties are deliciously fragrant, but it must, in fairness, be added that large batches may be raised from seed without yielding a single fragrant plant. Most of the varieties seed freely, but it is worthy of note that in *C. persicum* the peduncle does not coil itself in the spiral form for which *C. hederifolium* and other hardy species are so remarkable. If allowed to ripen too much seed the plant will be weakened, and will flower less freely the following season.

*C. hederifolium* just referred to, together with *C. europaeum*, are scarcely less desirable than *C. persicum*, and being perfectly hardy require no attention beyond that of planting in a

partially shaded border, in ordinary garden soil well drained. They succeed admirably in turfy peat, and may be employed as edgings to beds of American plants.

The only method of increasing these plants is by seed, which readily vegetates if sown as soon as ripe in pots of light soil placed upon a window or in a cucumber frame. The young plants will generally bloom the second season after planting, and increase annually in size for many years.—(*W. Thompson's English Flower Garden, Revised by the Author.*)

### THE KITCHEN GARDEN.—No. 7.

THE next steps to take after the course of the walls has been determined on I consider to be levelling, draining, and trenching the ground, which should be done in the order they are named, because after levelling it is much less difficult to erect walls at a desired height above the surface than before that operation; and in draining, the depth at which the drains should be placed below the surface is also easily decided on; afterwards trenching can be performed without the danger of the soil being again interfered with.

With regard to levelling the ground, I do not suppose that in an amateur's small garden the labour would be expensive, as it is neither likely nor advisable, where such a small space is enclosed, that a spot would be chosen so very uneven as to involve a large outlay in moving soil; nevertheless, there are very few places so favourably situated where more or less of this work will not be found necessary. Here let me not be misunderstood. I do not refer to levelling in the strict sense of the word, where to perform it properly the soil would be as level as the surface of still water, but to throwing down banks of rising ground and filling-up hollows so that the surface may be free from inequalities apparent to the eye and be not very far from level. This will generally answer all purposes. If the ground has a natural incline towards one point or another favourable for a garden, so long as the incline is not steep, it is seldom advisable to interfere with it beyond rendering the slope uniform, and let the walls follow the same course.

To form a garden on a perfect level is seldom attempted; it may be easy and at the same time necessary in some localities to have one or more of the walls on a horizontal line, say the north wall, and, perhaps, the south wall as well, but on a lower level; in this case the east and west walls would take the course of the ground in order to meet the others. Before levelling the surface soil the nature of the subsoil should be ascertained and compared with the thickness and quality of the surface soil, because in moving earth from one part of the garden to another some places will be left comparatively thin and unfertile, while others will be enriched and deepened to an unnecessary extent; yet it is possible, by a judicious selection of soil and carting it here and there, to make the soil of the whole garden workable and of uniform quality.

Draining is the next work to be done, and must be regarded as the first important operation towards the improvement of a soil. It should, therefore, be done in the most careful and substantial manner, but for a small garden it is not necessary to adopt such expensive plans as would be needed where the extent of ground is large. In determining the number of drains to be put in and their depth, a safe guide will be found in the nature of the soil. If it is heavy and retentive, extending to a good depth, it should be freely drained, more particularly if it is below the level of adjacent ground, as at the foot of steep declivities, where there would be at times such an accumulation of water as to almost flood the garden. In such cases it might be worth while to consider the desirability of securing a system of drainage on the highest side of the garden proper, so as to catch the water before reaching the latter; and the garden itself might be drained in the ordinary way by placing the cross or branch drains about 3 or 4 feet deep, and the main or collecting drains somewhat deeper, providing, of course, a good fall so as to carry off the water quickly. In a soil of the above description the drains may be from 10 to 20 feet apart, but in a lighter and more open soil, even if they are not farther apart, they may be laid deeper. All these matters, however, must be regulated by local circumstances, such as the rainfall for a series of years, &c. There are situations for gardens where no artificial draining is needed, the surface soil and the under strata being so porous as to quickly carry off any superfluous water that may accumulate. In planning a system of drainage let me remind my readers that the fruit-tree borders and walks ought to have their share

of it, and the hothouses and Vine borders must not be overlooked. It will always be useful to have a plan of the whole arrangement drawn to a scale, and with all important points and outlets marked on it for future reference, in case of alterations and repairs being found necessary. Where it can be done I should prefer separate drainage for the glass houses and Vine borders, on account of the extra watering the Vines would need, and the more general and constant use of water in those places; so that, if any misfortune befell the drains in the garden it would not affect those of the hothouses.

I will now offer a few remarks upon the materials of which drains are composed, and which are various, such as stones, brickbats, flints, chalk in large pieces, and sometimes wood. The above are, perhaps, more suitable for collecting the water than for carrying it off, and one reason for using them is that they can in many cases be more easily procured than other things. In districts, for instance, where stones abound the excavations for foundations consequent on the formation of new gardens often afford enough to supply all the drains and to serve for many other purposes. Stone is the most lasting of any material; nevertheless, tile or pipe-draining is most resorted to in these days, and the pipes used are of various sizes, according to the nature of the soil and the probable quantity of water which will have to pass through them. I do not recommend having them too large for garden drainage. They are made in lengths of a foot or 15 inches, and from 2 to 4 inches in diameter, the smaller size being used for the branch drains and the larger for carrying the water away. I ought to have said, that when laying the drains in the garden in connection with the walks their course should be marked out by stakes, so that when the walks are made and drained there will be no difficulty in finding the lower drains for the purpose of connecting the others to them.

After draining comes trenching, which is an important operation for the pulverisation and improvement of the soil; but on a new piece of ground that has become hardened by lying undisturbed for years, it is not only necessary to consider the best method of trenching it up, but also whether it will be advisable to do it at all for the first year or two, at least to any great depth; because in some cases—hungry clays or poor gravel, for instance—the subsoil is even worse than that at the top, and if turned up it would be quite unworkable and unfertile for years. I should prefer to treat this differently, by merely turning the ground over a good spit deep, breaking up the bottom 6 inches, and at the same time adding some manure or better soil. After two or three crops had been taken off I would trench it up another spit deep, still keeping the surface soil at the top; and when the subsoil had become more workable and pulverised I would trench it up again at the same depth, but this time turning the bottom spit to the top. If it could be arranged for this to be done in winter the soil would work all the better in the spring. I have practised this method, and have found it a very safe one to recommend. It may be taken as a rule that on most plots of land there is a surface soil of greater or less thickness, possessing far greater productive qualities than that lying beneath it, and to trench this in to 2 or 3 feet in depth seems to me bad policy.

There is, however, another way of going to work which may be here stated, and that is to turn up the ground three spits deep, leaving the bottom one there, placing the top spit in the middle, and mixing with that and the top one what refreshing soil or manure the ground may seem to be in need of. On the other hand, where a soil is to be found of good quality to a uniform depth of 3 feet, the case is so different that I have no hesitation in saying that this may very advantageously be trenched to the full depth at once. It may be that the spot chosen for a garden has an exhausted surface soil; here, then, is a good reason why trenching should be done at once, but even then I should be careful not to break-up the ground too deeply for one year. Of course, all hardened soils when required for gardening purposes must be broken up, and are benefited thereby, and I have thrown out the above hints for the purpose of showing how necessary it is to make a careful examination of the soil before going too far. I once took charge of a garden which had been formed out of a meadow, and possessing from a foot to 18 inches of good loamy soil on the surface, with a subsoil approaching a clay. The trenching was done at the same time as the draining, and all the good soil was deposited at the bottom. I have known a man labour hard a whole day to work-down the soil and sow two rows of Peas; this was in dry weather when the soil had become hardened by the sun, but in wet weather the operation of

working it down was equally difficult, it being so tough. Most of the ground was retrenched so as to bring the old soil to the surface again, and this proved to be a successful operation, for the crops grew better and the labour of the garden was much less difficult, though the good soil had become somewhat deteriorated owing to the garden being insufficiently and too deeply drained.—THOMAS RECORD.

### HEATING.

I HAVE received a kindly letter, which gives me an opportunity to state that, though fully aware of Mr. Hood's mode of calculating the amount of piping required to secure any desired temperature by the surface exposed—viz.,  $1\frac{1}{2}$  cubic foot for every superficial foot of exposed glass surface, I did not adopt it, as the finding is so fallacious and contrary to the requirements of practice as to lead me to the conclusion that Mr. Hood intended the cubic contents of the structure to be taken as the basis of calculation. This conclusion is, I think, borne out by the table given by Mr. Hood in his treatise on "Warming Buildings by Hot Water," showing the quantity of 4-inch pipe which will be sufficient to heat 1000 cubic feet of air per minute to from  $45^{\circ}$  to  $90^{\circ}$ .

For example, to secure a temperature of  $65^{\circ}$  for 1000 cubic feet of air, the external air  $40^{\circ}$ , we have in the table 104 feet required, and by Mr. Hood's rule (see page 181) very nearly a corresponding result.  $125 \times 25 = 3125 \div 135 = 23 \times 1000 = 23,000 \div 222 = 103$  feet of 4-inch pipe. Admitting, however, my being in error, the cubic contents of the structure not being intended, let us apply the rule to the stove alluded to at page 181. The extent of glass surface is 1188 feet superficial, and we shall have, at  $1\frac{1}{2}$  cubic foot for every foot of exposed surface, 1485 cubic feet of air to be heated from  $40^{\circ}$ , the mean temperature of the winter months in our climate to  $65^{\circ}$ , the highest maximum from fire heat required.  $125 \times 25 = 3125 \div 135 = 23 \times 1485 = 34,155 \div 222 = 153$  feet of 4-inch piping, which would be barely sufficient to keep out frost, much less to give the required temperature of  $65^{\circ}$ , being less than one-third of what is needed in practice. We have 4780 cubic feet of air to heat, and only provide to heat 1485! What is to heat the remaining 3295 cubic feet of air? Mr. Hood surely meant the cubic contents of the house, adding  $1\frac{1}{2}$  cubic foot for each superficial foot of glass surface, which will give 649 feet of 4-inch piping; or, if we take the cubic contents of the house, we require 495 feet of piping, practice demanding 558 feet of 4-inch pipe, or six rows all round excepting doorways. I therefore concluded Mr. Hood intended the cubic contents, a conclusion I do not depart from; and as Mr. Kinnear courts criticism, allow me to apply the formula given at page 167 to the stove above alluded to,  $65^{\circ}$  the temperature of the structure and  $40^{\circ}$  the external air. The superficies 1188 multiplied by eleven times the intended difference  $25^{\circ}$ , and the product divided by fifteen times the intended difference of the heat of the water ( $200^{\circ}$ ) and the air of the house ( $65^{\circ}$ ) gives us 161 feet of 4-inch piping. Let us take the cubic contents of the structure 4780 cubic feet; following Mr. Kinnear we obtain 649 feet of surface at  $200^{\circ}$  to give the temperature required, which is very close upon what practice demands, and is a most excellent mode of calculating the piping required.

I make no complaint against the theoretical calculations. Mr. Kinnear knows full well that no one keeps the heated surface regularly at  $200^{\circ}$ , the water being that at night may be not half that in the morning; therefore, to meet this loss we need in practice considerably more heated surface to give us the required temperature just because we do not keep the heating surface at its maximum constantly, it being on an average not more than half the temperature it is theoretically calculated to be.

Permit me to thank Mr. Kinnear for his very able papers, which have deeply interested and instructed me, as also no doubt many of your readers. They are very valuable were it only that they showed what a waste of coal takes place in our stoveholes.—G. ABBEY.

**RHODODENDRON SHOW.**—The Commissioners of Russell Square have given permission to Messrs. John Waterer & Sons, of Bagshot, during the month of June next, to hold their Exhibition of Rhododendrons in the garden of that square. The garden is one of the largest and best kept in London, and it is in a good position, and adapted for a display of this kind. We are informed that the Exhibition will be on a very large scale, and

for the most part will be composed of varieties of Rhododendrons hitherto unknown. Messrs. Waterer, we need hardly say, are celebrated growers of Rhododendrons.

### HYACINTH SHOWS.

Last week we had Kensington, which, as usual, was the great battle-ground of the London nurserymen, this week we have the Royal Botanic, where the combat is generally renewed; but all the while there is going on a mild form of warfare, in which the leading growers try to outvie each other by holding an exhibition in their several neighbourhoods. In each case the Hyacinth is the principal object, in fact plays the lion's part; but it is presented in so many different aspects and with so many different accompaniments, that the capabilities of the flower in a decorative point of view are thoroughly brought out. Of late years no spring flower that we know has risen to such a degree of favour as the Hyacinth. Go where you will about London you will see it in window or in front garden, and where there is no real horticultural love you will see well-contrived paper imitations of it, which afford neither pleasure to the sight nor any other sense. It is, too, so easily cultivated by anyone having but a little common sense that failure in attaining respectable results, provided good bulbs are obtained, is almost an impossibility; and no one who sees the splendid spikes which are brought to the exhibitions, and which it is quite within the power of the amateur to equal, would be without at least a small collection at this season.

MESSRS. VERTUE, of Chelsea, have, as they have had since they took up Hyacinth-growing, a fine display at the Royal Exotic Nursery, the merits of which can easily be surmised from the specimens shown at Kensington last week, and then reported on.

MESSRS. CUTBUSH, of Highgate, again, are not behind; and although they only took second honours at the show just referred to, no one who has seen their admirable groups can expect other than a fine exhibition from them. Though the varieties are not so numerous as in former years, by judicious weeding-out the quality on the whole is better. We noticed none of the inferior kinds, and many fine examples of such well-established favourites as Charles Dickens (S. B.), General Havelock, De Candolle, Von Schiller, Grand Lilas, Macaulay, Grandeur à Merveille, &c. Along with these were some new kinds, as Quirine Christine, Christine Henderson, noticed last week; Habit d'Été, pale porcelain; Progress, porcelain blue, and Spark of Fire, bright crimson; both, however, past their best. Along with these were Tulips, Crocuses, Cyclamens, Cytisuses, and a variety of other plants serving to afford variety and to form a setting to the whole.

MESSRS. DOWNIE, LAIRD, & LAING have this season for their field of operations the Crystal Palace, where their show occupies a double range of staging, extending 100 feet in length. The centre is occupied with Palms, Azaleas, the variegated Acer Negundo, Spirea japonica, Dielytra spectabilis, and other plants; the lower stages with Cyclamens, Tulips, Chinese and other Primulas, together with the Hyacinths, of which there is a very good show. We will not particularise kinds, as the best of these have been so often mentioned before.

### LAZY-BED POTATO CULTURE.

[We sent the letter from "AN OLD SUBSCRIBER" to Mr. R. Fenn, and this is his reply.]

I NEVER recommended the lazy-bed system, nor do I, and I have not practised it since 1838, when I acceded to what I styled to my neighbours the "lazier-bed"—viz., instead of casting-out the soil on to 2-feet alleys, merely to be cast back again over the seed tubers in their damp bed, I placed the Potatoes 1 or 1½ foot apart each way, according to the sort, upon a measured 4-feet parallelogram of surface soil, and cast-up the soil from two 2-feet alleys running along each side to the depth of 8 inches upon the sets at two operations, guided by the time for the second when the sets were just beginning to "push through." In short, this was just the reverse plan to the lazy-bed, with very little laziness about either in regard to the operator, that I could ever find out; but the lazier-bed produced for me far better crops of Potatoes, and so it would be with your correspondent's Myatt's Ashleaf.

What I would recommend to "AN OLD SUBSCRIBER" in preference to either, is the ridge-and-trench system, and hereby hangs a tale. I remember in 1840 I was staying at a gentle-

man's house in Sussex. The soil of the kitchen garden was very stiff and retentive, producing very unsatisfactory crops of Potatoes. I was sufficiently a Potato devotee at that primitive time even to be consulted about what was best to be done to produce a better-eating esculent. A half-rotting furze-stack happened to be near, and it struck me to advise its being cut into refuse, excluding merely the largest stems, and to have it placed about 2 inches thick on the surface of the garden in measured plots, and a little soil cast first upon the chopped furze, then the sets to be placed upon it and soiled-up as for the lazier-beds described above.

The gardener "couldn't see it," and what was more, he "wouldn't do it," so the coachman was ordered-up to "see to it," and get the affair completed as advised. I felt sorry to have been the innocent cause of an opposing ill-feeling for the time, but I had the opportunity in the following autumn of seeing the Potatoes taken up; and the very excellent sample, hitherto quite unapproached in the memory of the oldest inhabitant, proved sufficient to heal-up all differences. Astonishment, too, was expressed as to what had become of the "fuz." Nothing remained of it but a modicum of mere sticks.

Well, the lazier-bed led me on eventually to the adoption of the ridge-and-trench plan, which will probably remain for me to the end of my time, and which modern writers, I am happy to find, are generally beginning to recommend, along with other ideas promulgated in these pages many years ago and onwards, so that it would be a work of mere supererogation for me to resuscitate them again. Your issue, No. 461, 1870, page 57, will describe what I should say appropriate to the subject for the present day; in fact, all that our modern recommendations do give, barring "Hibberd's Potato-tile," which, as I trust there are not now many prejudiced "blue-aproners," may meet with a better reception even than my idea did when the furze-stack. But, however that may be the higher we lay our Potatoes to grow the better fare; and whether on "lazier-bed," or in ridges, with the "tile" to boot, I will answer for murrain to follow on the heels of sustained lightning, thunder, and rain. So allowing the riders of hobbies to pass along with the esteem that each of them owns for the other, let us hope to have in June, July, and August dry and cheery weather, and that will be tantamount to a healthy crop of Potatoes following.

This brings me to the second question of "AN OLD SUBSCRIBER," requiring the name of the largest Potato cultivated. Paterson's Bovinia or American Late Rose, the latter being by far preferable for garden culture, and much the dearer to buy. I have some very large seedlings under my own probation, but two years more will be required of me before I can say which of them is to go forth and run the gauntlet at Chiswick; and as I daily scrutinise the nonages of some two hundred of them, they seem to say, "Albeit you have given up your old *nom de plume*, and the frequent use of your pen, you cannot be allowed 'rest' unless you intend the Americans to beat us Britishers." I answer, "Please the Potato fates, the Americans have got all their work cut out to do so."—ROBERT FENN, *Rectory, Woodstock.*

### ROYAL BOTANIC SOCIETY.

THE first spring Show, held yesterday, proved a very attractive floral display, which, like its predecessor at Kensington, was favoured by as bright sunshine as we have had this year. Hyacinths, Tulips, and Cyclamens were the leading features. Messrs. Veitch and Messrs. Cutbush took the prizes in the nurserymen's class for twelve with splendid examples; and among amateurs Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, was foremost with grand specimens of Lord Byron, Marie, Von Schiller, Cavaignac, La Grandesse, De Candolle, and others, together with Erebus and Sir Garnet Wolseley, both new additions to the single blue class, the former very dark. Mr. Weir was second. The same exhibitors, both nurserymen and amateurs, took the same positions for Tulips; whilst in Cyclamens Mr. Goddard, gardener to H. Little, Esq., Twickenham, was first, and Mr. James, of Isleworth, second with excellent groups. Excellent pots of Lily of the Valley from Mr. Douglas, and Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., took the honours for that flower; whilst beautifully bloomed plants of Dentzias from Mr. Douglas and Mr. J. Reeves were deservedly placed first and second in the competition for that plant.

Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, sent the best group of twelve stove and greenhouse plants in flower, comprising good specimens of *Odontoglossum Pescatorei*, *Lycaste Skinneri*, *Dendrobium nobile*, and other Orchids, together with *Eriostemon intermedium* in fine bloom. Mr. G. Wheeler was second. The same exhibitors also sent Azaleas. The half-dozen

from Mr. Ward were exceedingly well bloomed, particularly A. Borsig, a fine semidouble white. Messrs. Lane and Mr. G. Wheeler sent forced shrubs; the latter, Mr. James, and Messrs. Cuthbush, Chinese Primulas; and Mr. James and Messrs. Dobson, of Isleworth, Cinerarias.

Of miscellaneous exhibitions Mr. Williams, of Holloway, and Messrs. Rollisson, of Tooting, sent fine mixed groups; Mr. G. Wheeler also contributed one. Messrs. Veitch had collections of Hycinthus, Tulips, Cyclamens, and Clematises; Mr. W. Paul, Hycinthus, cut Camellias, and Roses; Messrs. Lane, a charming group of Camellias in pots; Messrs. Jackman, of Woking, a collection of Clematis; and Mr. Williams, one of Cyclamens. New plants were plentifully shown by Messrs. Veitch, Williams, and Rollisson, and the certificates given were correspondingly numerous.

### NOTES AND GLEANINGS.

THE noted collection of ORCHIDS made by the late Thomas Dawson, Esq., of Meadow Bank, Uddingston, is to be offered for sale by auction on the premises, on the 6th and 7th of May next. This includes some of the finest specimens of rare and beautiful Orchids in the kingdom, and no doubt the high reputation in which the collection has been long held will attract from all parts of the country and the Continent some of the most eminent Orchid-growers.

— WE have received from Messrs. Maule & Sons, of Bristol, a coloured plate of the NEW FRUIT FROM JAPAN, which they are advertising in our columns. It is a variety of Quince, with beautiful scarlet flowers, and the fruit forms an excellent marmalade. Messrs. Maule exhibited both the fruit and the preserve at the Bath Show, and both were much admired. We can testify to the excellence of the preserve from personal experience.

— AN ingenious contrivance has been devised by Mr. George Monro, of Potter's Bar, the well-known inventor of "the cannon boiler," by which plants and fruits may be grown up in glass without artificial heat with perfect security from the effects of extreme cold and frost. At present Mr. Monro is not prepared to give publicity to the system, but as soon as he has it quite matured due notice will be given of it.

— THE ORCHARD HOUSES AT SAWBRIDGEWORTH are now in their glory, the trees being in full bloom, and exhibiting a concentrated mass of colour rarely to be witnessed. The new house recently erected, which is 200 feet long, is as full as it can hold with fruiting Peaches and Nectarines in pots. These were started in the beginning of January, and the fruit are now in some instances  $1\frac{1}{2}$  inch long, or nearly as big as Walnuts. The only heat given is by a Deards's boiler and three 4-inch pipes, the cost of which is a bagatelle. There must be many thousands of fruit in the house. A new vinery is also a sight worth seeing. The Vines are in pots, and these stand on the pipes. Each Vine bears from eight to nine bunches; when full grown they will produce an enormous weight. We never saw a grander sight in the way of fruiting pot Vines.

— MESSRS. WILLIAMS & Co., patentees of the Archimedes lawn mower, have introduced a number of patterns of TRELLISES for flowers, made of a combination of wood and cane, which appear to be very useful for the purpose they are intended to serve. They are very light and elegant in their design, and are a more durable-looking article than the split-wood trellises we have seen in use.

— REV. C. C. ELLISON, of Bracebridge, sends us the root of an Apple tree worked on Rivers's Broad-leaved Paradise stock, planted over two years ago, during which period it has extended over 6 feet in a direct line about 8 inches from the surface. Mr. E. says, "This fact suggests some useful hints about growing grass or crops of anything around one's fruit trees. I may note that the soil in which it grew is rich and in fine condition, a bright lightish loam."

— THE Exhibition of plants, flowers, fruit, &c., of the ROYAL FLORA SOCIETY OF BRUSSELS is to be held on the 5th, 6th, and 7th of April, at the New Exchange, Brussels. Foreign horticulturists and amateurs may compete for prizes, among which are gold, silver, silver-gilt, and bronze medals, also money prizes of £4 and £2. Lists of consignments for exhibition should be sent to M. Lubbers, Secrétaire de la Société Royale de Flore, No. 28, Rue du Berger, à Ixelles, Brussels, on 31st March at latest. Notice of entry should have been given on the 20th, but as the intimation did not reach us till that day, exhibitors from this country will do well to ascertain whether that rule is to be strictly insisted upon.

— THE extension of the CINCHONA cultivation in Darjeeling continues. Every year additional land is brought under Cinchona culture, and it is calculated that two thousand acres more will be cleared and planted within the next four years. With regard to Ipecacuanha, upwards of twenty thousand plants and cuttings are now in hand, all of which promise well. Another interesting fact relating to the introduction of useful plants into India, is that of the success in the Terai of the Cacao (Theobroma Cacao, L.). The plants that were planted-out about a year ago, were sent from Kew at the suggestion of Dr. Hooker, and they are now in a most healthy and satisfactory condition.—(Nature.)

— THE steamship "Manhattan," which left Charleston, S. Carolina, for New York, February 25th, had on board the first new STRAWBERRIES of the season, being about a hundred quarts; she also took new green Peas, both being among the earliest shipments known. They were the growth of Florida, and indicate that the semi-tropical climate of that State is able to furnish fresh fruits and vegetables nearly all the year round.

— WE learn from the *Hants Independent* that the experiment is being tried of shipping BROCCOLI from Jersey to America, via Southampton.

— A BELGIAN paper, says *Nature*, describes an immense petrified trunk of a Conifer discovered in the province of Linburgh in perfect preservation. Its length is about 33 feet, and its diameter about 20 inches.

— THE SOUTHAMPTON HORTICULTURAL SOCIETY have fixed the 25th of May and the 1st and 3rd of August for their Exhibitions. The schedule contains a liberal list of prizes, and the Committee have been fortunate in having the first prizes in many of the classes presented by various gentlemen and tradesmen residing in the neighbourhood. The principal prize is a silver cup and £10, offered at the August Show for the best collection of thirty miscellaneous plants, open to all.

— A SCOTCH pauper lunatic (says *The Pall Mall Gazette*) who believed himself to be a millionaire used to describe with much gusto the costly viands daily prepared for him, and served on gold plate, adding that he could not understand why they all tasted of oatmeal. A similar objection might be made to the confectionery of the present day, owing to the extent to which it is pervaded by a flavour of VANILLA. The propensity to give the public rather too much of this good thing will be increased by a discovery which, according to the *Scotsman*, has been made in Dr. Hoffmann's laboratory at Berlin, and is published by that journal as especially interesting to the possessors of Fir trees, of which there are many in Scotland. There is, it appears, in the juice of Fir trees, between the wood and the bark, a crystalline substance called coniferin, a glucoside, as chemists call it, which, when acted upon by oxydising agencies, is easily converted to vanillin, the chemical principle of vanilla. As a few grains of this vanillin will flavour at least a dozen ice puddings, and the juice of an ordinary-sized Fir tree contains enough coniferin to make five guineas' worth of vanillin, it is evident that Scotland can supply all our pastrycooks with this article without greatly diminishing the forests of Firs now about to clothe her hills with the most delicate of vernal green.

### A BIT OF THE NEW FOREST.

I AM obliged to acknowledge that thirty years, or thereabouts, have passed since the sunny autumn day on which I walked forth from Southampton to wander through a part of the New Forest. I was a Fern-collector in those days, and a prime object was to obtain specimens of *Osmunda regalis*—that truly Royal Fern, that "flower-crowned prince of British Ferns"—nor was I disappointed. Nowhere since have I seen it in greater luxuriance or so appropriately placed as in some of the grassy open spaces among the trees near Rufus's Stone, the memorial of the traditional place where the tree stood against which the arrow glanced that killed the Red King. Pages could I fill with extracts from my notes on the forest scenery—Lyndhurst, Foxlees, Ladycross, and other places whose beauties are still remembered; but I must pass on to a church crowning a steep ascent, and deeply set amid the forest trees. It has been well described by a recent visitor as "so thickly surrounded by large Elms that the square embattled church tower is not visible in the summer landscape, and scarcely in the winter; but from the churchyard you have glimpses through leafy screens, or thinner network of bough and twig, of the wide-stretching

woodland in which it stands. The church, the oldest part (they say) Saxon, another part thirteenth century, patchwork as it now is, retains on the whole a quaint and pleasant rusticity."

In the churchyard stood the largest Maple tree, in fact I think the only Maple tree I ever saw. It is here portraited, but not from my pencil. Its stem at 4 feet from the ground was more than 6 feet in circumference; to its topmost twig must have been 40 feet, and the diameter of the circle shaded by its branches as much. I did not know the name of the parish, but beneath the boughs of the Maple was an oblong altar tomb thus inscribed: "In a quiet mansion beneath this stone, secure from the afflictions, and still more dangerous enjoyments of life, lye the remains of William Gilpin, sometime vicar of this parish, together with the remains of Margaret, his wife. After living above fifty years in happy union, they hope to be raised in God's good time, through the atonement of a blessed Redeemer for their repented transgressions, to a state of joyful immortality; there it will be a new joy to meet several of their good neighbours who lye scattered in these sacred precincts around them. He died April 5th, 1804, at the age of eighty. She died April 11th, 1807, at the age of eighty-two." This

revealed to me my whereabouts — I was in the churchyard of Boldre, and by the side of the remains of him whose "Forest Scenery," and tours in search of the picturesque were so much admired, and are still-used tenants of our bookshelves.

He was "a lineal descendant of Bernard Gilpin, called 'The Apostle of the North,' born in 1724 at Scaleby Castle, near Carlisle, the house of his grandfather, 'a counsellor of note,' whose eldest son, being a bad manager, ran into debt, and was at last obliged to sell the family place. He entered Queen's College, Oxford, January 1740 (N.S.); obtained his Bachelor degree in 1744; was ordained 1746, and made curate of Irthington. He became an M.A. 1748. In 1752, age twenty-nine, he was principal assistant at the school of the Rev. Daniel Sanxay, Cheam, Surrey, who in a year retired in Gilpin's favour. He now married. His own account, dated thirty years later, is simple and pleasing:—

"When my uncle was in possession of Scaleby Castle, before his affairs went wrong, he took a little niece, a fatherless child, to bring up. He had no children of his own, and his wife and he considered her as such, nor were any father or mother fonder of any of their own children than they were of her. She used often to be at Carlisle to play with her cousins, and her consins were as often at Scaleby to play with her. She was a pretty little girl; and everybody said she was a very good little girl. In short, one of her consins, though only a schoolboy, took a particular fancy to her. He soon after made his father and mother his confidants; and they were far from discouraging him. They probably thought (as I do now) that early attachments, though not favourable to ambition and worldly schemes, are far from being unfavourable to virtue; and my father, good man (which alone would endear his memory to me), painted her picture and sent it me to Oxford; though the poor girl herself was then ignorant of the occasion. In process of time, however, the plot began to open. The two cousins became acquainted with each other's sentiments; and though (as neither of them had anything to depend on but themselves) it was several years before the drama was concluded by a

marriage, yet at length this step was thought prudent by all their friends; and they have now (1791) lived together about thirty years, without having been almost as many days separated. No marriage could be more happy. All their schemes succeeded; and they are now, in their old age, in affluent circumstances, and have six fine grandchildren to bear their name after them. They have often said to each other they never knew what could be called an affliction; and only have to hope that God will be pleased to work with them by felicity, as He often does with others by calamity."

"In his school he seems to have been a sort of minor Arnold; took great pains with the morals and religion of his pupils, had a constitutional code, and in certain cases tried a culprit by a jury of his fellows, 'bound by honour.' 'I never knew,' he says, 'an improper verdict given.' Two daughters were born to him, who died young, and two sons, of whom the elder went to America, married, and grew rich, settling at Philadelphia. The second son, another William, went into the Church, and succeeded his father as master of Cheam School in 1777. The father, fifty-four years old by this time, had kept the school for twenty-five years, and now retired

with about £10,000 saved. His many excellent qualities, both as man and teacher, made many of his old pupils friends of his for life, and one of these, Colonel Mitford, author of the 'History of Greece,' now presented him to the vicarage of Boldre. He had thus altogether an income of perhaps £700 a-year. In his large parish, fifteen to eighteen miles in circuit, Mr. Gilpin went about actively, visiting the poor cottagers and helping them as well as he knew how. As a preacher he had an impressive earnestness and simplicity; and it is related that he once compelled a



THE BOLDRE MAPLE.

certain rich married farmer to give up a mistress whom he kept, to the general scandal, and, moreover, to appear in church, led in by the two churchwardens, and to repeat after the curate a paper of confession and contrition, after which the vicar preached a grave appropriate sermon. Mr. Gilpin was large-built and rather corpulent, with a good voice and dignified presence, fit for a head master, fit for a vicar. His face, somewhat fat, with a roundish bald head (I have seen his likeness in crayons, hanging in Walhampton Park, a house which he often frequented), chiefly expresses a grave and cheerful benevolence, spiced with some hint of mental alacrity.

"After being released from the school he indulged his love of scenery and sketching by making frequent tours, generally, or perhaps always, accompanied by his wife, in some of the most beautiful parts of England and Scotland, a very uncommon kind of amusement in those days; and produced in succession the already-alluded-to publications.

"His life at home was simple, pure, and economical; he seldom dined out. 'I never was fond,' he says, 'of eating and drinking; but, from habit, I have now taken a thorough dislike to them both, and never dine pleasantly but on my own bit of mutton, and a draught of small beer after it (for I never drink wine), and so the job is over.'

"His delight was to stroll after breakfast into the grove behind his vicarage, note-book in hand; to improve his little grounds and garden; to visit in turn his parishioners, rich and poor, especially the latter (not forgetting their bodily wants); to address kind words of greeting, inquiry, admonition,

or encouragement to everyone he met in his walks; to come home to his bit of mutton, his dear good wife and family, and his pen-and-ink drawings in the evening. His style of art was not the exact and realistic, but the bold and generalising—verging often on what Mr. Ruskin calls the *Blottesque*; his illustrations of the Highland and other scenery only possessed—and according to his convictions were right, inasmuch as they only possessed—a kind of broad and sweeping resemblance to real scenes; and his very numerous later drawings were nearly all fancy sketches, exemplifying the true rules of ‘picturesque beauty,’ as he conceived them. These sketches—made with a reed pen and a brownish ‘iron-water’ ink, and afterwards ‘toned’ with a yellow wash—he used to give away freely to his friends, until it came into his mind that he might in this way make some money for the benefit of his poorer parishioners. He had already, out of the profits of his books, built and opened a school at Boldre for the children of day labourers—twenty boys to be taught reading, writing, and ciphering; twenty girls, reading, sewing, and spinning. To this school he wished to leave a permanent endowment, and also an aid to the school at Brockenhurst, and sold for these ends a collection of his drawings, received £1200 for them, and placed it in the three per cents. The sum being still insufficient to carry out all his intentions, he went to work again with his reed-pen, at the age of 78, and in two years produced a large number of drawings. These, ‘the last effort of my eyes,’ in 1802, were sold by auction at Christie’s, and produced no less than £1560. The schools were endowed accordingly; and the Boldre children, in addition to being taught free of all charge, received yearly, the boys a jacket, pair of breeches, and a green vest; the girls a green frock and black petticoat. The school-house, shadowed by a pair of tall lindens, stands on the roadside between the church and the vicarage, and the school, locally called ‘The Green School,’ is still alive, but not flourishing.

“There are three notable trees, now flourishing in Boldre parish, which are connected with this good old vicar’s memory. You may see them in the course of a moderate walk. About a mile from Lymington, well sheltered among soft woody slopes, stands the comfortable vicarage of grey and red bricks, with trim flowery lawn guarded by Scotch Firs, and slanting little meadow, beyond which rises the grovy hill in whose wood-walks Mr. Gilpin used to stray. Near the south-west corner of the house stands conspicuous an unusually fine Occidental Plane tree, tall, shapely, healthy, which the vicar used to admire more than seventy years ago, and has celebrated in the ‘Forest Scenery.’ This Plane was the vicar’s favourite home-tree.

“In his walks he was fond of visiting a Yew some two miles distant,—

“‘A tree,’ he says, ‘of peculiar beauty . . . It stands not far from the banks of Lymington River, on the left bank as you look towards the sea, between Roydon farm and Boldre church. It occupies a small knoll, surrounded with other trees, some of which are Yews, but of inferior beauty. A little stream washes the base of the knoll, and winding round, forms it into a peninsula. If anyone should have curiosity to visit it from this description, and by the help of these landmarks, I doubt not but he may find it at any time within the space of these two or three centuries in great perfection, if it suffer no external injury.’

“There it stands at this day; now, in winter time, sombrely conspicuous as you approach it among the naked grey boughs of the Oak coppice.

“The third tree connected with Mr. Gilpin’s memory is the Maple, of which the portrait is here.”

Mr. Gilpin had many friends whose tastes and literary acquirements harmonised with his own. Prominent among these were the Rev. Mr. Mason, author of “The English Garden,” and his brother poet the Rev. Mr. Crabbe. The latter has thus portrayed Mr. Gilpin:—

“His frequent visits seldom fail’d to please;  
Easy himself, he sought his neighbour’s ease;  
To a small garden with delight he came,  
And gave successive flowers a summer’s fame;  
These he presented, with a grace his own,  
To his fair friends, and made their beauties known,  
Not without moral compliment: how they  
‘Like flowers were sweet, and must like flowers decay!’

“Simple he was, and lov’d the simple truth,  
Yet had some useful cunning, from his youth;  
A cunning never to dishonour lent,  
And rather for defence than conquest meant;  
‘Twas fear of power, with some desire to rise,  
But not enough to make him enemies.

He ever aim’d to please; and to offend  
Was ever cautious, for he sought a friend,  
Yet for the friendship never much would pay,  
Content to bow, be silent, and obey,  
And by a soothing suffrance find his way.”

We are indebted for most of the notes on Mr. Gilpin to a very interesting volume, “*Rambles by Patricius Walker*,” published by Messrs. Longman & Co.

## MERCURY.

[WE received some roots from a correspondent, “STORT,” who stated he had them from Lincolnshire, and recommended to have the leaves they would produce used as Spinach. It came bearing the suspicious title “Mercury,” so we sent it to an able correspondent dwelling near Lincoln, asking for particulars. The following is his reply.—EDS.]

AFTER six hours’ immersion in warm water, and a further forty-eight hours in a close propagating case, I am able to recognise in “STORT’s” enclosure a crown of the veritable Lincolnshire Mercury. Of this there is no doubt whatever; the freshened leaves and the taste of the root are precisely identical with a crown just dug from the garden. This vegetable is grown, or rather grows itself, in thousands of gardens in this county. In many villages every farmer’s and cottager’s garden has a bed of it; in fact, a plot without a “Markwerry” bed is considered by many to be singularly barren and destitute. It is not, however, generally met with in the gardens of the gentry, and I observe that as the farmers rise to this higher position (and they have risen rapidly), the Mercury beds become neglected, and are eventually destroyed. This may be that gardeners have a prejudice against it, regarding it as a rubbishy crop. Certain it is that it will grow in spite of their cultural skill, and clings to its home with the pertinacity of any indigenous weed. Yet it is not a weed, but may be correctly described as a plebeian vegetable, highly esteemed by its numerous humble owners. By these it is valued for its table excellence, earliness, and productiveness, and it is, moreover, credited with medicinal virtues of traditional authority as being “good for the blood.”

It is often called Everlasting Spinach, and the name is as expressive as any that could be chosen. It resembles Spinach in growth and leaf form, but is rather woolly, and lacks the bright gloss of that vegetable; it grows in the same plot from generation to generation, of course spreading outwards, but not rapidly, and is not at all a “travelling plant,” after the manner of Pennyroyal. In many gardens it is grown near to the cottage, so that soapuds and other refuse are handily given to it, so as to induce a quick free growth, and enable the owner to “cut and come again” a good many times over; hence the above name is very descriptive and good. It has another homely name—Allgood, as the succulent stems as well as the leaves are cooked and eaten. When 6 or 8 inches high it is cropped over, not quite close to the ground, tied in little bundles, and cooked. When served it is not unlike Spinach, but is firmer, and when old very slightly bitter. Although it has been extensively driven away by gardeners in favour of Spinach, yet Spinach will never supplant it in the estimation of the working population. These consider it infinitely preferable to Spinach, and, judging it on its merits, it is highly probable that almost everyone liking Spinach would like Mercury better.

If “STORT” will plant his crowns 9 inches apart in any convenient unshaded corner of his garden, in any sort of soil, and give it a covering of manure every autumn, he may have Mercury as long as he lives, and his children after him, even to the third and fourth generation; and if particularly liked he may improve quality and increase quantity by adopting the cottager’s practice of pouring on it soapuds or any liquid manurial refuse at any season, but especially in the spring and early summer months. It would not be advisable to cut it the first year, but a few sprigs for trial might be thinned-out without any harm being done. It grows 18 inches to 2 feet high.

Since writing the above I have referred to that valuable work of reference, “The Cottage Gardeners’ Dictionary,” and on page 532 find the following:—“Mercury (*Chenopodium Bonus-Henricus*).—This perennial plant is known by the various names of Angular-leaved Goosefoot, English Mercury, or Allgood, Good Henry, Good King Henry, and Wild Spinach. In many parts of Lincolnshire, as about Boston, it is cultivated to use as Spinach; the young shoots are also peeled, boiled, and eaten as Asparagus. Sow the seed in March, but

October is better, in a well-manured bed, prepared as for Asparagus; in the middle of September plant the seedlings during rainy weather in a similar bed, in rows a foot apart each way. Hoe frequently, and use the shoots or tops as required. Dress the beds with manure the same as for Asparagus; they will continue in production many years. This must not be mistaken for Mercurialis, or Mercury, one of our common hedge weeds; for this is poisonous. Mercurialis is a diocious plant, and belongs to the natural order Spurge-worts; but the Chenopodium belongs to the natural order Chenopods, and to the Linnean class and order Pentandria Monogynia." "SRRR" need have no fear in this point; his roots are not those of Mercurialis, but Chenopodium.—J. WRIGHT.

### POTTING, DRAINAGE, &c., FOR VINES.

POTTING, drainage, watering, and air-giving or ventilation—these operations may be reckoned the four chief corner-stones of the successful cultivation of fruits and flowers in pots. If they are not attentively and properly performed, no other points of culture can work-out a successful issue. Indeed, if we include temperature and cleanliness, there are not many points of great importance left out of this catalogue of the successful fruitist or florist. They may be considered the six points of a horticulturist's charter: and they all hang together like a perfect law; if one is violated, the fulfilment of all the rest avails but little, and failure must be the issue. To be successful in the growth of fruits and flowers in pots, there must be what we shall term a perfect symmetry of practice maintained without the least reservation or neglect. Hence a successful gardener's life must be one of promptitude and punctuality. A plant in a pot never prospers under the care of an attendant who is not both punctual and prompt in attending to its wants. A day's neglect or violation of certain laws often results in disasters which can never be completely repaired.

We have to day (February 13th) passed through our hands a considerable number of fruiting pot Vines that were struck from eyes last year. Before filling a span-roofed house 80 feet long with these, each plant was turned out of its pot and the drainage examined. The majority of these Vines were potted in very fibry but rather strong loam, packed very firmly into the pots. The drainage was ample and very carefully performed: first a layer of larger crocks was put into the bottom of the pots, and it was finished off to the depth of 2½ inches with finely-broken crocks free from dust. All the plants thus potted and crocked were a perfect mass of fine healthy fibrous roots; so fresh and nice were they that one of our assistants remarked that the roots had begun to grow. The fact is, that the roots are just now in the same fresh state as when they ceased growing last autumn. It was not necessary to turn them upside down to get the balls out of the pots; they are such a mass of fibrous roots that all that was necessary was to take hold of the Vine stem and lift the whole out of the pot *en masse*.

The remaining number were grown in a more sandy loam, and potted much less firmly. The drainage, by some oversight, consisted of just a piece of broken pot over the holes in the bottom of the pot. We tried to lift these out of their pots in the same way, but found that instead of a lift of ball and roots from the bottom of the pot, they were only liftable little more than half-way. The layer of soil at the bottom of the pots was soured and pasty-like, and with next to no roots in it. As a whole, there is not half the amount of roots in the same sized pot, and the young fibre there is not so healthy and sound.

Here, then, we have the result of the violation of one point of our charter making the attention of the practitioner to the other points of no avail. We have no hesitation in saying that the difference of these two sets of roots arose from the difference of drainage chiefly, and of potting partly, and, as a contingent consequence, the difference of watering. The want of sufficient drainage prevented the water from passing away sufficiently freely, and the loose potting held more in suspension than the pot full of firmly-packed soil did. And wherever these conditions exist, we have in all our practice found fewer rootlets or feeders, and these few of a different order. In the case of Vines this is especially the case; the roots are few in number, dropsical-like, and never ripen or survive the winter or period of rest in proper condition. Not only so, but a pot firmly filled with soil holds more soil, and as a consequence more nourishment. It also holds less water, for a pot with a given quantity of soil has room for a less quantity of water than another with less and looser soil in it. Nor is this the only

advantage. As our correspondent Mr. J. Simpson pointed out some time ago, the very resistance offered to the roots of a plant by a firm body of soil causes it to make more roots and of a better quality than takes place in a loose soil. It is a fact, too, that a soil holding less water in suspension induces plants to multiply its feeders, and take more complete possession of the feeding ground afforded it. A plant in the open ground will make more twiggy roots in a season of drought than in one of wet. The same holds good of plants in a pot. This is a point in plant-culture generally that must be regarded as of great importance.

Now for the deceptive part of the business in regard to Vines. A Vine in the circumstances as to potting and watering pointed out above as undesirable and injurious, may, and often does, make a stronger cane than does another Vine under the contrary and better conditions. But I need not tell the expert that the cane or growth is of a different character. It is longer-jointed, there is more pith in the wood, there are less compact and less symmetrical bunches formed in embryo in its buds; its roots do not come so rapidly into action as do those of the fine fresh fibry character.

A word as to our mode of placing such Vines in their fruiting quarters. We have no objection to turning them entirely out of their pots into a border of soil, but think it desirable that the feeders should have more scope than is afforded in an 11 or 12-inch pot. We transfer the ball entire into Orchid pots of the same size, with three tiers of large holes in them, and plunge them in the borders; the roots, of course, get out freely all round the balls into the fresh soil—and for midsummer fruiters this is a great advantage.

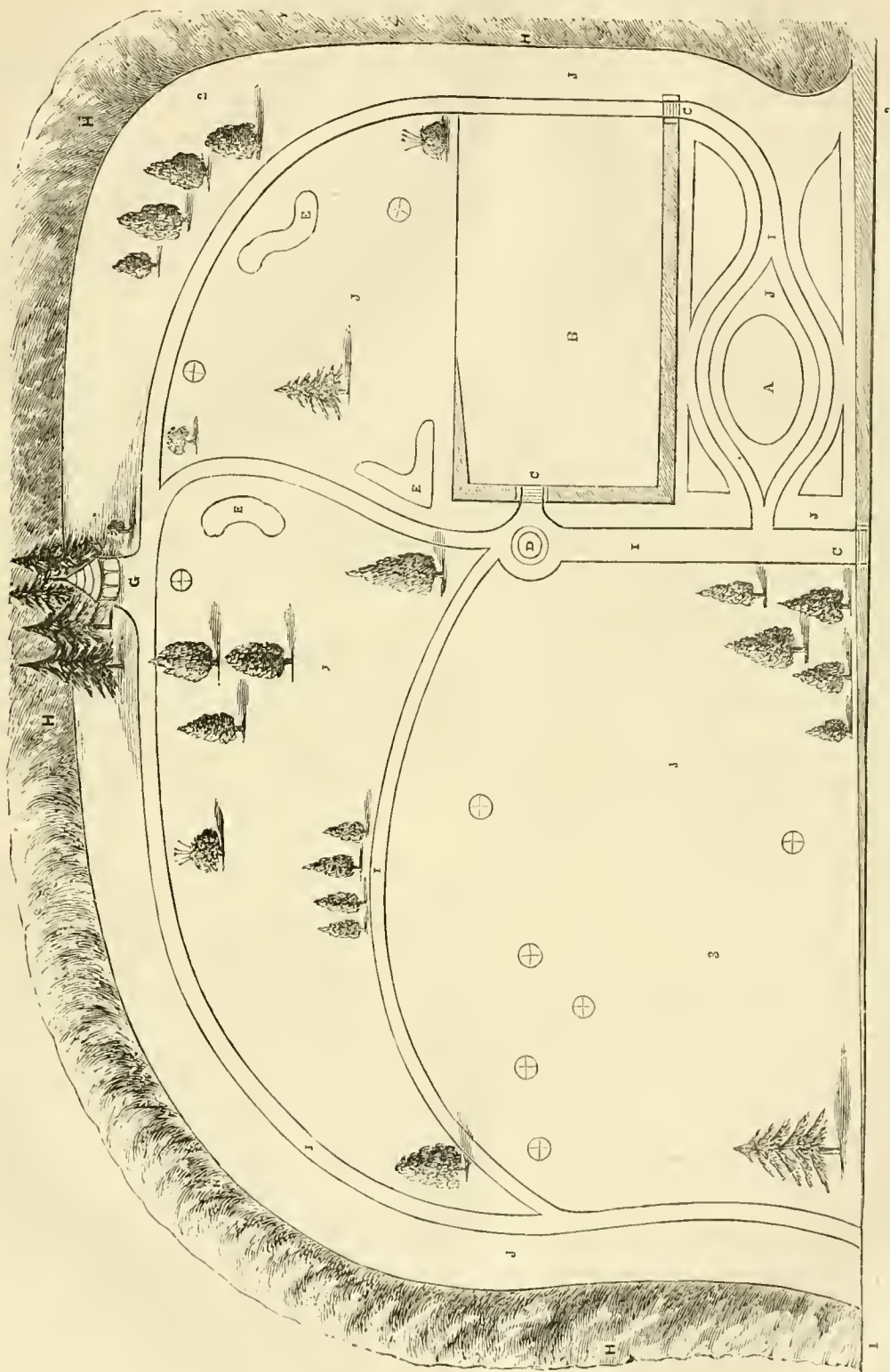
Too much water at the roots is a great evil in the case of young growing Vines, but is one that is scarcely possible with perfect drainage and thoroughly firm potting. To some extent this same rule applies more or less to all plants in pots.—(The Gardener.)

THE WEATHER here was very severe on March 10th and the two following days, accompanied with snow. The Apricot bloom was nearly all destroyed; that not fully out very much injured, and I fear entirely destroyed. Peaches and Nectarines were not in bloom, and Apples are quite safe. The trees have been protected some time with tiffany. Lilacs appear to have suffered very much, as they were just putting forth their bloom buds; in some instances the branch is entirely destroyed.—G. HOLLIDAY, Castle Hill Gardens, Blechingley, Surrey.

### LAYING OUT A LAWN.

THE arrangement of a lawn with its walks, groups of shrubs, trees, and other accessories is not a difficult operation, and yet it frequently proves very puzzling when first taken in hand, more, I am inclined to think, from a feeling of diffidence combined perhaps with a dread of adverse criticism and an ignorance of certain fundamental laws than from a want of taste. Simplicity of design, unity of expression, sufficient expanse to impart an air of dignity and repose, and a pleasing variety, are the general principles which should most influence our measures, and which I have striven to embody in the accompanying plan, designed for the guidance of "A Novice." It has been repeatedly stated in former papers bearing upon this subject, that however clearly general principles may be explained, yet each case invariably presents its own peculiarities requiring special treatment, and the present example appears to afford an opportunity for the explanation of certain details which may be applicable to similar cases.

We have here a piece of ground in the form of an irregular semicircle, enclosed on three sides by a belt of shrubs, with sheltering trees behind, and a grass terrace on the remaining or front side. There are already about a dozen trees irregularly dispersed about the surface. The positions of the croquet ground *b* and a seat at *c* are given, and it is required that an approach shall be made to the croquet ground. The lawn is intersected by other walks, and the positions of groups and beds of shrubs are shown. Now, although the rough sketch and descriptive note communicated by "A Novice" were as clear and explicit as could be wished, yet, as every irregularity of the surface, every object or feature upon or near it, exercises a certain effect on the whole, it is impossible to prepare a plan quite accurately without actually seeing the ground itself. It frequently happens that a design which appears to be perfectly correct on paper has to undergo considerable modification when it is wrought out. More shrubs, or an entire group or



## REFERENCES TO PLAN.

A. Rhododendron or Rose Garden.  
 n. Croquet Ground.  
 c. Steps.

D. Ash Tree with Seat.  
 E. Beds of Flowering Shrubs;  
 F. Grass Terrace.

G. Arbour.  
 H. Border of Shrubs.  
 I. Gravel.

J. Turf.  
 The circles represent trees already  
 established.

two, may be found necessary to impart the requisite finish, to give balance or fullness to parts that prove so expansive as to present a bald and meaningless appearance; or, as is more frequently the case, fewer shrubs are found necessary than it was thought would be required in the first instance. It will therefore be understood that this plan is simply suggestive.

An arbour is substituted for the seat at *a*, to impart a picturesque and important air to the less interesting part of the lawn, and to afford rest and shelter at the most distant point—precisely where it would most likely be required; and the Ash tree at *b*, from its central position and nearness to the croquet ground, is surrounded by a seat and circular sweep of gravel, into which the main approach to the croquet ground and the two branch walks converge. The space between the terrace and croquet ground, by its form and position, is admirably adapted for a Rhododendron or Rose garden. It is 5 feet lower than the terrace, from whence, therefore, the full beauty of its flowers might be enjoyed. It would be a charming adjunct to the croquet ground, which is on a still lower level; it would impart much beauty and interest to the entire scene; and it would in itself form an object of prime importance. It might be planted entirely with Rhododendrons, or with Roses, or a mixture of the two. Thus there might be a grand central mass of Rhododendrons with four side beds of Roses.

The large space of turf, *c*, might probably require a few more shrubs or a bed or two near its margin, but I have not introduced more in the plan from ignorance of the size of the trees already growing there. If they should be fine stately old trees, then there should be a considerable expanse of lawn around them; if they are of no great size, then, and only then, more shrubs would be required. This is a matter requiring much caution, a crowded style of planting only being admissible for immediate effect. Wherever it is practised, if frequent attention is not bestowed upon the progress of the plants and to the timely thinning of crowded groups, they will gradually assume the aspect of mere thickets, and all individuality among the shrubs will be lost. It should be added that the ground falls from 1 to 2, 2.—EDWARD LUCKHURST.

**THE CATHERINE PEAR.**—It answers well in Devon as a market Pear, and I consider it much superior in flavour to either the Crawford or Green Chisel, but not up to a fine "Bergamy." It also answers well in the Southams of Devon, where there is one of the oldest and largest Pear trees I ever saw, one half of which is Catherine, the other Autumn Bergamot. In some very old fruit catalogues it is named Green Catharine.—A. McKELVIE, Torrington.

## NOTES ON VILLA AND SUBURBAN GARDENING.

ALTHOUGH much has been said and written relative to the importance of arranging plants in flower gardens according to their complementary colours, but little attention in a practical point of view has been paid to the subject. This is the more to be regretted, because the theory of colours is not an imaginary one, but is founded on nature, and therefore as nature demands that to produce an harmonious whole certain colours must be properly blended, we ought not to distribute plants at random. "Every decided colour," observes Goethe, "does certain violence to the eye and forces the organ to opposition." Thus, let any one fix his eye intently on the brilliant scarlet flowers of *Verbena ignea*, and in a few seconds the colour becomes oppressive to that organ, but no sooner does he remove it to the green foliage that surrounds the flower than the pain ceases and the observer experiences relief. And why is this? Because green is the opposite or complementary colour of red, and in the same manner yellow demands purple; orange, blue, and *vice versa*; and so on throughout the whole range of colours, as all the intermediate gradations reciprocally demand each other, the simpler colours requiring the compound, and the contrary.

Again, colours are divided into two classes—viz., warm and cold. The warm colours are red, orange, and purple, and their shades; and the cold or complementary colours, green, blue, and yellow, in their various gradations; while white, which for gardening purposes takes the place of green, may be considered complementary to the whole of them, as all colours are improved by being brought in contact with it, with the exception of pale pink or yellow, to which it gives a rather dingy appearance.

Where the flower beds are surrounded by grass it is not advisable to introduce cold colours, as yellow or blue, to any great extent, but, on the contrary, warm colours, as red, orange, and purple, should prevail, and the opposite when the beds are on yellowish brown gravel, which is a warm colour. For this reason it is that some persons object to certain colours in their flower gardens; but if when cold colours are placed on grass

the beds are surrounded by a narrow margin of the complementary colour, the effect of the flowers will be much enhanced, and the same will occur when the beds are on gravel.

These remarks are offered at this time with a view to the arrangement of colours in sowing spring or planting autumn-sown annuals, which must be got into their permanent quarters as soon as possible. In arranging the plants I would particularly insist upon a due proportion in their height as well as in the colour of their flowers.

In borders that are viewed in their length and breadth the colours should be arranged in the following order:—Red, white, yellow, purple, orange, blue; repeating the same colour or some shade of it at regular distances throughout the length of the border.

One of the great advantages of a window garden is the agreeable occupation it affords to those amateur gardeners who are imprisoned in towns, to invalids, and to lady amateurs, and young people who are confined to the house by bad weather in town or in the country. Watering the plants, tying-up climbers, making cuttings, and raising seedlings, shifting the plants, watching the daily progress and daily opening of the flower buds may serve to beguile many a tedious hour, and persons unaccustomed to plant-culture would hardly believe how much occupation, amusement, and instruction those little gardens will supply. It will be found a great improvement and tend to secure a healthy vegetation to plunge the pots in moss, and to cover them with the same material. The green moss in itself is a beautiful object, while it serves to conceal what is the very reverse, a collection of red garden pots. Then, by keeping it wet in summer, and dry or nearly so in winter, an atmosphere may be readily provided exactly suited to the wants of the plants, and the soil in the pots is kept at all times in an equable state with regard to moisture and temperature, protecting alike from the burning sun in summer and from the cold which is occasioned by evaporation or by radiation under a clear frosty sky in winter.

In furnishing the garden it is evident that, in order to produce the best effect, the habit of the plants should harmonise with the limited dimensions of the structures intended to contain them. Moderate-sized flowers of clear and brilliant colours, delicate foliage, and a compact habit, are the points to be chiefly attended to in selecting the plants.

A small garden in the outskirts of a town should have more flowering plants and flowers cultivated in it than would be wanted in the country, as flowers are much valued and produce a more delightful contrast in such situations. It is very doubtful, however, how far training climbers to town houses in the cottage or villa style is accordant with good taste, especially as they seldom look healthy or flower freely. Consistently with a good supply of flowering plants, moreover, a town garden cannot have too many evergreens, for they produce liveliness and verdure at the season of the year when, in towns, the most leaden dullness often reigns in the atmosphere.

As the weather has taken a favourable change, operations which should have been performed some time ago may now be proceeded with in good earnest. Ground that has been winter-dug and fully exposed to the mellowing influence of the late frosts will now be in excellent condition for receiving seeds, therefore embraces an early opportunity of getting-in the principal crops of Carrots and Onions. Of the latter the most useful sorts for a villa are the Strasburg and James's Keeping; a small patch of the Silver-skinned may also be sown for pickling. Sow in 4-foot beds in rows 9 inches apart, taking care not to cover too deeply. Examine previous sowings of Peas in case of injury from frost, drawing a little earth to them if they require it, and make a successional sowing of Dwarf Marrow Peas or the Auvergne; the latter is very prolific and well suited for succeeding the early crops. Sow in rows 3½ feet apart with Spinach between them. Prepare for planting Potatoes, also get-in seeds of Turnips, Parsley, Radishes, and Leeks, the latter for transplanting. Let the soil be frequently stirred between the rows of young Cabbages, and plant-out from those sown in the autumn.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

THERE is but little that can be done amongst fruit trees of any sort. If nailing is not finished it ought to be done without delay. The protecting material ought to be let down over the walls every night when there is any danger from frost. The ground is very dry on the surface, and where the borders were dug over early in the winter the surface is caked, and a few weeds are appearing; it has therefore been desirable to run the hoe over them to destroy the weeds and disintegrate the soil. It has also been necessary to run the Dutch hoe through the Strawberry beds. Hoed and earthed-up early Peas, and afterwards put sticks to them. A common mistake in sticking Peas is to leave the sticks bare at the bottom, so that the plants cannot lay hold of them readily. Short sprays about a foot or 18 inches in length should be placed to the rows first, and closer together than the longer

sticks; these serve to support the Peas until they can lay hold of the permanent supports.

Planted out *Cauliflowers* on ground that had been deeply trenched and well manured last year. In this soil neither Broccoli nor Cauliflower will do any good during the late summer months, but we can always maintain a good supply of Cauliflowers during May and June. Strong plants are put out under hand-lights in October, and are encouraged to grow freely in open weather during the winter. A second lot is pricked out into boxes and protected by glass lights, and to succeed these a sowing is made in a hotbed late in January. The plants just put out are in drills, which are drawn deeply, and are thus protected to a certain extent from frosty winds; the first time the ground is hoed the drills become filled, and the soil that falls in serves as an earthing-up to the plants. The sorts preferred are Early London, Walcheren, and Lenormand.

Carrots, Lettuces, and Radishes sown under ground vineries make rapid progress. The Radish requires to be thinned out. It is necessary to sow the seed thickly, as mice generally dig up and eat them before they germinate; such depredations can be prevented by trapping. When the Lettuces are sufficiently advanced the thinnings will be planted out in the open ground, and will come in a little later than the plants which have been pushed-on under glass. It is in vain to plant them without some sort of guard to keep off the sparrows, which would strip off every vestige of green in an hour or two. The same sort of guard that is used for the rows of Peas answers admirably for this purpose. A thread of woollen yarn with a few feathers attached run along the rows will sometimes keep them off.

Vacant ground that was dug or trenched in the winter may now be lightly forked over. The more the surface is stirred when in a dry state the better; in wet weather it is much better to leave such work to a more suitable season.

#### FRUIT AND FORCING HOUSES.

*Pineries.*—A very high night temperature is not essential in Pine-growing, but if it is desirable to bring on rapidly the fruit which is swelling in the fruiting house, there will be no danger in raising the night temperature to 70°, or even to 75° if the weather is mild; shutting up early in the afternoon with sun heat, 85° or 90° may be obtained. The walls, paths, and any plants in the house may be syringed, but avoid syringing the Pines overhead; keep the evaporating troughs full of water at all times. We have used guano water for filling the troughs; it may do good, and cannot do any harm to the Pine plants; but tender subjects, such as Ferns, are sometimes injured by it, and having once used it in the same manner in a vinery until the Grapes began to colour, we fancied that the Grapes tasted of it when they were ripe. Suckers potted in the autumn should now be transferred to their fruiting pots, if this has not been already done. If they have become pot-bound, it is very likely that they will start prematurely into fruit as soon as potted. Our own, which were potted a month ago, contained a number of plants which had become root-bound, and many of these have started into fruit. We like a moderately brisk bottom heat for freshly-potted plants, and this would also cause some to start if they had any tendency to do so. Pines also require careful attention as regards watering, and the water should be warmed to the temperature of the soil around the roots before using it. It will not be necessary to look over the plants more than twice a week, when all requiring water should have a good supply; but each pot must be examined separately, and only watered if the soil is dry; better to under than to over-water them.

*Cucumber and Melon Houses.*—Where Cucumbers are grown in heated houses, little can be added to the instruction given in previous weeks' "Doings," thinning-out the old shoots, and replacing with fresh young ones once in a week or ten days. The surface of the ground should be dressed over where required with decayed manure. Syringe the plants every morning with tepid water, and should thrips appear, fumigate with tobacco smoke, and this must be done on three successive evenings, as thrips are more tenacious of life than green fly. Maintain a minimum temperature of 70°. Our Melon plants will be in flower in a week; the growth, so far, has not been so strong as usual, but the plants are healthy. When the growth is weakly it is necessary to crop according to the strength of the plants; thus, if strong plants are allowed to bear six fruits, weak ones would not be allowed to carry more than four. One important point in Melon culture is to see that a sufficient number of female flowers are open on the same day or the day following, as if an interval of three or four days is allowed to intervene between the setting of the fruit on a plant the fruit will not swell evenly, and sometimes the later-set fruit will not swell at all. We do not like syringing Melon plants much, but if red spider appear there is no better way to destroy it, as the plants can seldom be washed with any blight-destroying mixture sufficiently strong to destroy the parasite without also destroying the fragile leaves. The same remark applies to painting the pipes with sulphur, as is practised in vineries; 65° is a sufficiently high temperature unless the weather is mild, when the thermometer may rise to 70° at night.

*Orchard House.*—Since the trees came into flower the weather has been very favourable to the setting of the fruit; the atmosphere has not at any time been close and damp, but drying winds have prevailed nearly the whole time. The trees are gently shaken twice daily, the house is shut up at 6 p.m., and the ventilators are opened at six in the morning; if it is cold they are opened a little in fine weather to their full extent. Our trees are all in pots, and require careful attention as to watering at this time, and no more water should be spilled about in the house than can possibly be avoided. We found a use for the hot-water pipes when the temperature registered outside the house was 13° below freezing. If perfect success in orchard-house culture is desired, a heating apparatus is essential.

#### GREENHOUSE AND CONSERVATORY.

Camellias, Azaleas, and all sorts of spring flowers serve to keep these structures as gay as possible, and when there are abundant supplies of flowers there is also much time taken up in picking-over the plants, removing decaying petals, and re-arranging. Allusion was made two weeks ago to the destruction of red spider on New Holland plants; it may not be out of place to allude also to green fly on herbaceous Calceolarias, Pelargoniums, Roses, &c. This ought to be destroyed before the effects of its presence can be discerned on the plants.

We have been placing sticks to Hyacinths, and arranging the bells on the spikes with a pointed stick. We do not approve of dressing flowers; "floricultural millinery" is not to our liking, and such instructions as were given in a contemporary recently cannot be sufficiently deprecated; its readers were told to support the spikes with wires stuck into the bulbs, the bells to be supported with pins stuck through the flowers. All the dressing allowed either on the home stage or for exhibition consists in arranging the flowers on the spike with a cedar pencil, which is only assiating Nature. There is no neater support than wire, but it ought to be bent in this way, and not thrust through the bulb, which, like the "pin" or "green-thread" system, is simply barbarous, and the man who could condescend to such practices is not fit to be a member of the gentle craft.

Chrysanthemums are now requiring attention as regards training. If handsome well-flowered specimens are to furnish the stages in November, the foundation must now be laid by training the young growths down to a wire fastened under the rims of the pots. Shift the plants into larger pots as they require it; our Pompons were potted last week into 5-inch pots from the cutting pots. The plants were also dipped in tobacco water to destroy aphides. Cuttings of Perpetual-flowering Carnations have been put in; this ought to have been done early in February, so that the plants might have been strong and well advanced by November. It is not too late yet, and as they have been placed in a warm house and a brisk bottom heat they will soon form roots. The smallest "grass" is selected for cuttings; this will root much quicker than that which is thicker. Indeed, some of the miffy varieties, such as Prince of Orange and Ascot Yellow, will not root at all if strong cuttings are put in. A goodly number of sorts have been tried here, but only very few varieties are to be recommended, especially for small growers. Proserpine, La Grenade, Gloire de Lyon, Prince of Orange, Ascot Yellow, Miss Jolliffe, Avalanche, Blushing Bride, and The Bride (Turner), are the best. The last-named is more allied to the Clove section, but it is a most beautiful white, sometimes edged with rose.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

Miller & Sievers, 27, Post Street, San Francisco, California.—*General and Descriptive Catalogue of Flowering Plants, Bulbs, and Seeds.*

Charles Turner, Royal Nurseries, Slough.—*General Spring Catalogue for 1874.*

J. C. Wheeler & Son, Gloucester, and 59, Mark Lane, London, E.C.—*Illustrated Book on Grasses.*

#### TO CORRESPONDENTS.

\* \* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

BOOKS (J. C. C.).—Cuthill's "Market Gardening Round London," and "Bee-keeping." The latter you can have from our office if you enclose five post-office stamps with your address.

GREEN'S WROUGHT-IRON BOILER (—).—We must decline inserting more on the subject except in our advertisement columns.

BACK NUMBERS (*Summerville*).—You can have the two numbers you name if you enclose seven postage stamps with your full address, and repeat the dates of the numbers.

LABOUR REQUIRED (*W. L.*).—To keep in "decent order" the extent of lawn, shrubbery, and kitchen garden, with glass named by you, would require a head workman, an under-gardener, and garden labourer.

DISSA HESCHIELLI (*W. S. C.*).—We know of no record of the introduction of this species prior to some time in 1872. It has become very rare, and we think has never bloomed in England. Its season of flowering should be towards the end of summer.

PHOLIDOTA INSIGNIS (*Idem*).—With this species we are unacquainted, although the genus is very familiar, and we question if there is a described species under that name. There is none of the genus worth growing in small collections. Their flowers are produced in pendent racemes, and have the appearance of small shells upon a string. The colour of all the species known to us is white, or dull greenish white, whilst the pseudoballs and leaves somewhat resemble those of the genus *Cologyna*. They are natives of the East Indies.

SHRUBS FOR A MILD CLIMATE (*Novice*).—In such a favourable climate as yours, where "Fuchsias grow into trees, and Hydrangeas most luxuriantly," we should plant Myrtles, a choice selection of Veroniceæ, such as the fine old Hendersoni and variegata, with Royal Purple, Imperial Red, the pretty pink Gloire de Lyon, Madame Claude Williams, the graceful Lindleyana rubra, Madame Joubert, Rosa compacta, the very distinct and compact Decussata Devoniana, Intermida, salicifolia, and salicifolia rubra. Camellias, too, would flourish and expand their flowers in favourable seasons. Rubus is a good red kind; of others try Finbriata, Ochroleuca, Conspecta, Alba plena, Elegans, Storti, and Valleavedro. The pretty yellow Coronilla glauca grows to a large size in the open air at Torquay; it has been in fine flower at that place lately, you will therefore probably find it succeed well. Oranges will not answer. Nothing can be better than the Myrtles and Roses around the dog's grave; with them mingle the blue Veronica Hendersoni, the deep crimson Rhododendron John Waterer, the pure white kind Mrs. John Clutton, the deep red Ribes sanguineum, the bright rich yellow Berberis Darwinii, and the pretty white Spiræa arifolia, with the deep rich purple Clematis Jackmanni trailing over the grave. Do not let the shrubs in the border blend with these, but cause them to describe a gentle semicircle behind. For the arrangement of the lawn see a previous page.

NEPENTHES (*Inquirer*).—The seed is produced by flowers quite distinct from the pitchers.

WHITE DWARF BEDDING DAHLIAS (*T. W.*).—Alba floribunda nana is 2 feet high. Mademoiselle Charles Lefebvre is 3 feet high, and White Bedder 2 feet. They may be had of Mr. Turner or any of the other florists who advertise in our columns.

GERANIUM LEAVES SPOTTED (*T. H.*).—The spots on the leaves arise from the punctures of a species of thrips, for which we do not know of any remedy but to shut-up the house on a calm evening when the foliage of the plants is dry but the floor wet, and fill it with tobacco smoke. Repeat the fumigation in three or four days. Afford the plants rather more heat and a moderately moist atmosphere, watering only sparingly at the roots until the growth is more free.

APRICOT BLOSSOMS IN ORCHARD HOUSE NOT SETTING (*A Perfect Ignoramus*).—The blossoms sent are abortive, very weak, and have anthers but no styles or female organs. It is due to the previous year's treatment, and may have been occasioned by want of air, and insufficient heat and dryness for the ripening of the buds. We presume you have the trees potted or planted in a calcareous soil. If not, add to some rather light loam a fourth part of chalk in pieces as large as peas and walnuts, repotting early in autumn, just before the leaves fall. Remove a good portion of the old soil by reducing the ball, and pot very firmly with the fresh soil.

HEATING PROPAGATING CASE (*R. A.*).—You may have a small oil lamp placed in a chamber beneath the tank, fixing the lamp at such a distance from the tank that half the height of the flame will be taken by the bottom of the tank. The sides of the combustion chamber will need to be formed of perforated zinc; or have a row of small holes made about an inch below the flame to admit air for combustion, and from the chamber at its highest part should be a chimney to carry off the vitiated air, which need only be taken clear of the chamber. A very small lamp will suffice, and it will need to be regulated to give a flame that will heat the water so as to afford the required temperature. A little practice will soon enable you to regulate it to a nicety.

PYRETHRUM GOLDEN FEATHER CULTURE (*F. L.*).—To do well this golden-leaved bedding plant requires a moderately rich soil, enriched with leaf soil or other vegetable matter. Soil of a light nature is more suitable for this plant than a strong and wet one. The best plants are those raised from seeds, which should be sown in February or early in March in gentle heat, be kept near the glass, and when the young plants are large enough to handle they should be pricked-out about an inch apart in pans or boxes in light rich soil, returned to heat, and grown in a frame, hardening well off before planting-out, watering well then and afterwards until established.

CLEMATIS JACKMANI FOR BEDDING—BLUE LOBELIA (*Idem*).—The shoots of this Clematis ought not to be stopped, but should be disposed equally over the surface of the bed as they grow, they being tied to pegs at about 3 inches from the soil, but highest in the centre of the bed. For general bedding purposes use a good strain of Lobelia speciosa, which can now be had true from seed of most of our principal seedmen. We raise all our plants from seed.

ERROR.—At p. 166, column 1, line 42 from the top, for "stone" read "stove."

HEATING GREENHOUSE (*Rose*).—Though you give us the length of your house, the width and height are omitted, the last two not exceeding 10 feet. The house, a lean-to, would be heated so as to exclude frost and damp by a flow and return 3-inch pipe along the front and one end. As you propose to erect a stove, we should arrange to heat both houses from one fire and boiler. A small boiler only would be required. Send a ground plan of your houses, with particulars of what you require, to some of the hot-water apparatus manufacturers advertising in our columns, asking for an estimate. We should have for the stove a foundation of brick or stonework, about 2 feet 6 inches or 3 feet high, then 2 to 3 feet upright side sashes, and a span roof at an angle of 45°, the half of a quadrant, and the ventilation in the roof, on the most sunny side of the house—short lights to move the whole length of the house; they need not be more than 18 inches wide, and should be raised or

lowered by means of cranks and a lever. To give the height required, the aides will need only to be clear of the ground as regards the masonry, but we should have it as before stated. You will need to have four rows of 3-inch pipes, and the same for bottom heat if you have a bed on each side of the house—viz., two 3-inch pipes for each bed, and by having the walk in the centre you can fix shelves over it, which will be very useful for small plants, or such as require to be near the glass. Bottom heat is not, however, absolutely necessary, and may, if you do not require it, be dispensed with. Respecting the tenant's fixture, the best way is to arrange with your landlord before building. The woodwork may rest on a foundation, but must not be fixed to it or to walls, nor let into the soil. Your builder is the best authority to consult, because he will know the details.

SCARLET GERANIUMS TO FLOWER IN AUGUST (*Inquirer*).—Continue the stopping of the shoots up to the second or third week in May, and remove the trusses of bloom as they show up to the middle of June, keeping the shoots properly tied down and out so as to form good specimens. The plants ought to be shifted into larger pots in May, and when they fill with roots weak liquid manure may be given at every alternate watering. They would be better grown in a cold pit or frame after May, the lights drawn off at night, but replaced by day with abundance of air and slight shade from bright sun, protecting from heavy rains both night and day, but at such times affording them abundance of air by tilting the lights.

CINERARIA (*Idem*).—Pips fine, but colours not uncommon. No further opinion can be given without knowing the plant's habit.

GERANIUMS FOR BEDDING (*E. G. G.*).—The plants in the cutting-pots should be placed at once singly in 3 or 4-inch pots in good rich light soil, and removed to a pit, frame, or house, keeping rather close, shaded from bright sun for a time, and watering only moderately until the plants are rooting in the fresh soil, then water more freely.

GREENHOUSE PLANTS (*An Irish Subscriber*).—We presume you have Camellias, Azaleas, Epacris, and Ericas—at least a dozen kinds of each and good plants—if not, they should be added as they are indispensable for a display of bloom in the late winter and spring months. To these add Acaëa armata, longiflora magnifica, clefolia elegans, pulchella; Acrophyllym venosum, Aphelexis macrantha purpurea, A. rupestris grandiflora, A. Woodii, Boronia Drummondii, Cassia corymbosa, Chorozeuma cordatum splendens, C. varium Chandleri, Correas Brilliant, magnifica, speciosa major, Crowea saligna major, Cytisus Alceanus, C. racemosus elegans, Diosma capitata, Præcoxphyllum gracile, Eriostemon huxifolium, E. linearifolium, Erythrina floribunda, Euxantia floribunda, Genetyllis fuchsoides, G. lupiflora, Hæthroanthus fasciculatus, Imantophyllum minutatum, Kalosanthus coccinea superba, K. miniata grandiflora, Leschenaultia formosa coccinea, L. biloba grandiflora, Libonia floribunda, Linum trigynum, Mitrasia coccinea, Nerium rubrum plenum, Pterocoma prolifera, Barnesii, Pimela decussata, P. spectabilis rosea, Pteroma elegans, Polygala Dalmaissiana, Statice Holfordi, Thibaudia macrantha, Tremandra verticillata, and Witseia corymbosa. You will find a great many others in "Greenhouses," which may be had from our office, free by post, for 10d.

CANNA CULTURE (*X.*).—The roots should be potted singly in pots that will hold them without cramping, in a mixture of two parts sandy loam, and one part leaf soil, covering the roots about an inch deep, and placing them in a house or frame where there is a gentle heat. Water carefully until they are growing freely, increase the supply as growth advances. They should be well hardened-off before planting-out at the end of May or early in June. If inconvenient to place them in pots you may, during mild weather, plant where they are to remain, covering them with about 3 inches of light soil, and place over it a mulching of partially decayed leaves or short litter about an inch deep.

MANETTI ROSE STOCK (*G. E. T.*).—It is a free-growing kind, coming up in strong shoots from the root or base of the plant, attaining a considerable length in a season; the shoot covered with small hairy spines of a light brown colour, the wood brownish red, and leafstalk of the same colour; the leaflets tinged with rose whilst young. It is dissimilar to most kinds of Roses, and once known is readily distinguished. It seldom flowers, even when the plant is strong.

SUPPORTING SWEET PEAS (*Biceps*).—Nothing is more cheap or durable than galvanised iron netting, wide-meshed. You can have it of any height or width, and painted green it is ornamental.

FLOWER-BED ARRANGEMENTS (*C. L.*).—The arrangement of plants for the two circular beds, each 6 feet in diameter, is tolerably correct as to colouring. We suggest one or two desirable alterations. In No. 1 you have Echeveria secunda glauca planted on a ramp as an edging, enclosing a ring of the golden variegated Abutilon megapotanicum pegged down, then another circle of Lobelia pumila grandiflora, enclosing a central mass of golden bronze Geranium Deputy of Ribblesdale. The weak point here is the Geranium. Replace it with Laing's Black Douglas, which is of the same section, but with much bolder leaf-coloration. The arrangement might also be agreeably transposed by causing the Abutilon and Lobelia to change places, and substituting a pink Geranium, such as Amaranth, for the golden bronze. No. 2 has an edging of Mesembryanthemum cordifolium variegatum, then a band of Lobelia pumila grandiflora, with another of Dactylis glomerata variegata, enclosing a central clump of Sophia Dumaresque. The foliage of the grass and Geraniums would clash; discard both, substituting a ring of the beautiful golden-tricolor Geranium Lady Cullum for the Dactylis, and filling the centre with the elegant grey-leaved Centaurea Clementi.

HEATING A SMALL GREENHOUSE (*Cirencester*).—1. The flue, or rather the pipes, in my small greenhouse are taken round the entire house and brought out into a chimney close by the furnace, so that the heated air is dispersed entirely over the house. 2. The furnace is below the level of the house, and so, indeed, is the first part of the flue, but when it reaches the 6 feet which, as I have said, constitutes the only part that is made of brickwork, it is then on a level with the floor, and the pipes must, of course, gradually ascend so as to give a draught. 3. I always in bad weather—i.e., when at 3 P.M. the thermometer is below 40°—light the fire. I do not bank-up at all, but about 10 o'clock put on the last supply of coke, and this burns well and the fire is frequently alight in the morning. 4. I have to take out one or two of the pipes, which is easily done, and run a blue brush in when I want to clean out the soot, and this I do perhaps twice in the season. I have only to repeat that having used this mode of heating for years, I have not only found it to answer but I prefer it to all other methods for a house of the dimensions of mine.—D., Deal.

VINES NOT BREAKING REGULARLY (*Try Again*).—You say the Vines were kept very dry at the roots last summer, which in itself is sufficient to account for a bad start this year. Give the inside border a good soaking of water at

once, and syringe the canes two or three times a-day, damping the house at the same time.

**PEACH FORCING (G. A. T.).**—Mr. Taylor refers to a note by Mr. Gilbert in our No. 673, published February 19th. In Keane's "In-door Gardening" are weekly directions for forcing. You can have it from our office free by post if you enclose twenty post-office stamps with your address.

**SELECT BRIGHT RED AND SCARLET ROSES (—).**—*Scarlet*.—Alfred Colomb, Madame Victor Verdier, Dr. Andry, Marie Banmann, Général Jacqueminot, and Senateur Vaissé. *Crimson Scarlet*.—Charles Lefebvre, Fisher Holmes, Pierre Notting, Xavier Olibo, Prince Camille de Rohan, and M. Bonceane. *Red*.—Maurice Bernardin, Louise Wood, Camille Beraudiu, Madame Boutin, Dupuy Janain, and Marquise de Castellane.

**RAISING SCOLOPENDRIUMS FROM VIPERAROUS PLANTS (I. M. C.).**—The viperarous little plants on the fronds should be taken along with the frond on which they are when it is at its maximum growth and the little plants fresh. The frond should be laid on a pot or pan filled with sandy peat with good drainage, and pegged to the surface by the midrib. The surface should be sprinkled with silver sand so as to bring it level with the base of the little plants; give a gentle watering, and keep moist constantly. The pot ought to be covered with a hand or bell-glass, and be shaded from sun. When the young plants have rooted and are growing freely the glass should be tilted a little on one side, so as to gradually withdraw it; and when hardened-off pot singly in small pots, and grow on in a cool moist house.

**PEAR-TREE BLOOM-BUDS (A. J.).**—The number of buds on your tree is excessive, especially as it was only planted last November. We should allow them to swell, and even expand the flowers, but when these are fully open reduce each cluster to two or three of the best flowers, cutting the others away, and after the fruit is set leave not more than thirty of the finest, cutting-off all the rest.

**HEPATICA SOWING (J. P.).**—The seeds of Hepatica, also Christmas Rose, should be sown as soon as ripe in light sandy soil enriched with a third of thoroughly reduced leaf soil, choosing a sheltered border shaded from the sun at midday. A border to the east of a wall, or north of a low fence will answer. The seeds should be scattered rather thinly on a smooth surface, and be covered with fine soil about the eighth of an inch deep. The soil must be kept moist, watering occasionally in dry weather, and be kept free of weeds, placing a very light mulching of leaf soil over the surface where the seeds are in autumn. A year after sowing you will be rewarded with plants, which, after growing a year in the seed-bed, may in September be planted-out in lines 6 inches apart, and 3 inches from each other in the lines, and about the third year they will flower.

**ASPARAGUS AFTER FORCING (B. Bradford).**—The roots are of no further use, and should be cleared-out after they cease to produce shoots. You will require fresh roots for another year.

**VINES (X. X.).**—The Vines in 15-inch pots and from each of which you propose to take five bunches, keeping in pots this season, and planting-out in autumn, will not answer unless you give them a year's growth, cutting them off close, and taking a fresh cane from the bottom. We should not do this, but allow the Vines to make shoots an inch or two long and then plant out, disentangling and spreading-out the roots, giving a good watering with tepid water, and shading from sun until they are re-established and are growing freely. We should not take more than three or four bunches of fruit this season. We should rub-off the shoots from the top downwards to five from where you wish for side shoots, and all below that to the soil, originating the first at the bottom of the rafter, and having four side shoots, and one to train-up as a leader, which should not be stopped until it reaches the top of the house.

**FUMIGATING WITH NITRE, TOBACCO, AND CATENNE (C. E. P.).**—It would not be injurious to stove plants if carefully conducted.

**PERSIMMON (A. T.).**—It is the fruit of *Diospyros virginiana*, known also by the name of American Date Plum. It is a native of Virginia, Carolina, and Pennsylvania. It was first cultivated in this country more than two centuries ago, but although it produces abundance of fruit here we never heard of its ripening, but it might on our southern coast. When ripe it is yellow.

**NAMES OF PLANTS (T. Harwood).**—*Fritillaria meleagris*. (R. S.).—We cannot name a Fern unless a fertile frond is sent to us. (J. D. D.).—*Chimonanthus fragrans*; it is hardy, and the seeds will probably succeed. (D. G.).—*Euphorbia jacquiniiflora*. (H. D. H.).—We are sorry we cannot name your *Oncidium* from the single flower. In this and similar cases a rough drawing of leaves and habit is of great assistance. (H. H.).—*Cornus mascula*. (G. Diss.).—1, *Adiantum cucumerum*; 2, *Pteris cretica*. (L. Holmes).—3, *Adiantum hispidulum*; 12, *A. tenerum*; 13, *A. aethiopicum*; 10, *Davallia nova-zelandica*; 11, *Pellaea falcata*? (no fruit). (A Correspondent from Hamwood, Co. Meath, name illegible).—A form of *Anemone coronaria*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### A PET-LOVING EPIDEMIC.

I LITTLE thought my letter would be printed. Why, oh! why, dear sir, did you not at any rate omit the last paragraph? Through its unlucky publication I have discovered on whose shoulders the mantle of the late lamented Mrs. Caudle has fallen. Shall I "a tale unfold?" I will.

I had comfortably settled down in my chair of chairs, intending in comfort to enjoy my pipe and the perusal of "our Journal," when I heard:—"I should be ashamed of myself if I were you! The idea of writing of us as though we were a tribe of heathens, &c., &c., &c. I call it shabby of you. You are the cause of it all, and now you become a traitor." Reading was out of the question, and when opportunity offered I endeavoured to exculpate myself. "I can assure you, my dear, I only used the word 'demoralised' in a Pickwickian sense; but do not your Fantails come in to breakfast regularly? Does not Fred strip nearly all the vegetables in the garden of their leaves, and on being spoken to coolly says he takes them for his Rabbits? Did I not the other morning catch Johnny (act. five) watching with the most

intense interest a battle royal between a Black Red Bantam and my spotless Light Brahma? On my scolding him he said (hear this, oh 'WILTSHIRE RECTOR') that 'the man in the book' said 'Bantama did no harm.' And only a few days ago did not 'wee Maggie' insist on a travelling dealer in foreign birds coming back with her and the nurse, as she was sure papa would buy her a 'pitty bird?' " "Yes," said *cara sposa*, "and *papa* did. And who bought the Light Brahmas and gave —?" I fell asleep, but do please be careful for the future, for the sake of —St. EDMUND.

[A little knowledge of the mutual feelings of contributors and readers of "our Journal," a little glimpse now and then behind the curtain, or rather behind two curtains—the one where sits the writer, the other where sits the reader, promotes kindly feeling, creates a bond of union, without trespassing the least upon the privacy of names. Now, such a glimpse has "St. EDMUND" given, and given in a pleasantly humorous manner. Let me on my side lift the curtain too. Scene—My study. Time—Three o'clock in the afternoon of a certain Thursday. Condition—Headache. "I wish one did not live just so far out of a town as not to get a second delivery of letters; here I shall not get my Journal until to-morrow morning (Friday). I'll write to the new Postmaster-General about it, he may listen to a parson's grievance. Had I the Journal my headache would grow better imperceptibly, and by tea-time (how I enjoy my cup of tea!) I might be in a comparatively comfortable state, but 'tis a bad world." Enter a laughing rosy-cheeked girl. "I've got something, papa, to do you good and cheer you up. There! I have been down to C— and got your Journal for you, there!" producing it from behind her back and disappearing with a merry laugh. I open, I fold lovingly, I cut carefully. I give the preparatory look through before the actual reading commences. "Anything of yours in this week, papa?" says a treble voice near. "Yes, my dear, and they can read my writing well now at 171, Fleet Street, for there is not a single mistake." I turn over and read, "Kindly advise a family who, if such a thing is possible, are completely demoralised by those naughty men, 'WILTSHIRE RECTOR,' and Mr. W. A. Blakston, and other writers to papa's first piece of reading on getting home off his journey, 'our Journal'—St. EDMUND." Well, here is a pretty charge! I who have lived with a good character as yet, am called "a naughty man," and instead of strengthening the morals of a family, am said to help to demoralise them! What a charge against one of my cloth, or rather two charges!

But, like John Gilpin, "I love a timely joke," and enter fully into the pleasantry of "St. EDMUND's," both that of his first and second communications. I beg to assure him that I have enjoyed the tale he has unfolded, and so will our readers. Those little matrimonial peckings and pickings are always enjoyable to experience and to read of. Eve was made second, so she was Adam improved, and every good Adam has so considered her—*i.e.*, if his Eve is a good specimen. But there is that Johnny of the letter who fathers his love of cock-fighting on me! What shall I say to him—he and I would have a "battle royal" if we met, and perhaps I should get the worst. I conclude with best wishes to the whole family, and may they grow more and more "demoralised" in this good sense. May papa enjoy his pipe and "our Journal;" mamma enjoy picking at papa; and he retaliate always in such a good-humoured way, though I dare say, as usual, the lady had the better of it if we could know all—*i.e.*, her side as well.—WILTSHIRE RECTOR.]

### BLACK BANTAMS.

MR. CAMBRIDGE states that the paragraph written by me contains nothing more than a fair description of the points of Black Bantams, and this is precisely what I endeavoured it should do as concisely as possible, and without entering into other particulars. Mr. Cambridge then alleges that it contains ideas, which, if followed by amateurs or anyone else, would lead to certain disappointment, and be much more likely to send them astray than assist them to breed and show this variety of miniature fowl to perfection. Mr. Cambridge says it is an erroneous idea that the tail of a Black Bantam cock should be carried upright, and his head well back; that the breast of a Black Bantam should be round and prominent, and be carried forward by the cock; and that the neck of the cock should be taper, and gracefully curved well back, so as to bring his head into close proximity to his tail.

On referring to the latest edition, published this year (1874), of "The Standard of Excellence in Exhibition Poultry," authorised by the Poultry Club, and compiled by a committee, appointed by that Club, of many of the practical fanciers and successful exhibitors of the day, finally prepared in its present form by Messrs. Teebay and Dixon, two of the gentlemen whom Mr. Cambridge names as favouring the idea that Black Bantams' tails should be rather drooping than otherwise—I find that the description of Black Bantams, written in No. 675 of this Journal by me, is not materially different from that contained in the "Standard of Excellence;" indeed, both descriptions are very

similar. The "Standard" of a Black Bantam describes the cock's neck as being very taper, curving well back so as to bring the back of the head towards the tail, and his tail as being full and expanded, well adorned with long curving sickle feathers, and carried well up towards the back of the head; the tail of the hen being also full and expanded, and carried rather upright. The description in the "Standard" of a Black Bantam's breast is, that the cock's is round, and carried prominently forward; and that the hen's is round and prominent. In the "Standard" of a Hamburg, the cock's neck is described as being taper, the higher part being carried well over the back, and his tail as being full and expanded, the sickle feathers being well curved; the tail of the Hamburg hen is described as being full and expanded, and well carried. The "Standard" states that a Hamburg cock's breast is round, full, and prominent, and carried well forward; the hen's breast being broad, plump, and carried forward.

It will thus be observed that a Black Bantam is somewhat similar to what a miniature Black Hamburg would be as regards neck, tail, and breast; and I quite agree with Mr. Cambridge that in other respects there does not exist any great dissimilarity betwixt a Black Bantam and what a dwarf Black Hamburg would in all probability be; yet it must be admitted that the carriage of a Black Bantam is more upright and prouder than that of a Black Hamburg. I should indeed be very sorry to see Black Bantams bred with drooping tails, as in that case they would, to my thinking, lose much of their characteristic smartness and compactness; neither do I think a neck carried forward, or indeed one not thrown well back, would add much to the beauty of this essentially beautiful bird.

Those amateurs who possess Black Bantams answering to the description which I have given of this variety, and with which Mr. Cambridge thinks proper to find great fault, have reason to be proud of them, and they need not be disappointed with their birds, as, on first reading Mr. Cambridge's article, they very naturally would be; neither have I Mr. Cambridge's reasons for fearing that such fowls would be placed in the ignominious position to which he alludes.—WALTER B. ARUNDEL.

## BROMLEY POULTRY SHOW.

COL. HASSARD *versus* MR. W. H. GEDNEY.

On Friday last a summons which had been issued against the Secretary of the Bromley Poultry Show was heard at the Court House, Bromley. Col. Hassard sued Mr. W. H. Gedney for the sum of £2 18s. 6d., being the difference, less commission, between the price of a pen of Partridge Cochins entered by the plaintiff at the last Bromley Show at £5 5s. and claimed, and a pen at £2.

Col. Hassard conducted his own case, and explained that he had sent several pens of birds to the Bromley Show, that they had all been safely returned, with the exception of a pen of Partridge Cochins which he had entered at £5 5s. He found this pen did not arrive home, and telegraphed the Secretary of the Show to that effect, and received a reply that it had been sold. Since then the Secretary had sent him £1 16s., which would be the remittance for a pen entered at £2, less commission. He produced several communications which he had with the Secretary, and also with Mr. Long, the Treasurer. In one letter it was stated that the birds had been sold for £2, and by "plaintiff's order." Plaintiff denied having given any authority for reducing the price. A subsequent letter stated that plaintiff had transposed the birds in two of his pens, and that a single cock in the Selling class was the pen sold.

Mr. Dring, of Faversham, and Mr. Nichols, one of the Secretaries of the Crystal Palace Show, were called, and deposed to having seen the birds accurately in the pens as described by Col. Hassard; and the Judge's attention was called to the fact of the birds in question being "very highly commended," a distinction that would not have been bestowed upon a pen if only a cock had been shown in a class for cock and hen.

The defendant, who was very ably represented by counsel, pleaded that the birds had been transposed, and also the rules of the Show, "that they were not responsible for any loss or damage from whatever cause arising."

The Judge, after carefully reading the rules, remarked that he thought the rule with regard to non-responsibility in case of loss or damage would only apply in case of the loss or accident to a bird, such as breaking a leg, &c., but that they were bound by another rule, which stated that all sales must be made through the Secretary, and that a commission of 10 per cent. would be charged. He considered it proved that the birds had been correctly forwarded by Col. Hassard, and that he should have received the £5 5s., less commission. Verdict for plaintiff with costs.

HERTS AGRICULTURAL SOCIETY.—The annual Show of this Society is to be held on the 8th and 9th of July next, at Bishop's Stortford. The prizes offered amount to £1300, and are all open for competition in the counties of Hertfordshire, Bedfordshire,

Cambridgeshire, Buckinghamshire, Essex, and Middlesex. The Marquis of Salisbury has consented to preside at the dinner.

## PIGEON NOMENCLATURE.

FROM your "REPORTER's" and Mr. Lyell's letters I gather the fact that if an ordinary Dovehouse Pigeon had a dull dun substituted for its dull black, and a dirty silver for its dirty blue, it would be of the same colour as the Carrier in pen 77 at Glasgow. If such be the fact, is the bird not a "dark silver chequer?" The so-called barbarism "dun silver" is similar to black-blue (sooty), red-mealy, and yellow-buff (called, or rather mis-called, "yellow-mealy"), and each indicates a bird whose shoulders are of a dark even tint throughout, barred with black, dun red, or yellow. Each of these colours may be chequered, and when the chequering is so dense as to completely cover the shoulders the climax is reached, and the bird is a self-colour.

Mr. Lyell calls the bird a "dun chequer," which is making the same mistake as the Antwerp breeders do in calling a mealy chequer a "red chequer." Blue and black, silver and dun, mealy and red, buff and yellow, are the limits to the colours of the birds descended from the four original colours—viz., blue, blue chequer, mealy, and mealy chequer. As to the colours seen in the German breeds, the Archangels, &c., I would as soon believe that Blair Athol's sire was a Galloway as that these colours are descended from the ordinary wild Pigeons of Britain and Belgium.

Your "REPORTER," at the commencement of his letter mentions that "he gathered that I supposed him by 'silver dun' to mean the silver barred with dun of the Antwerp breeders." Silver is not allowed to exist in Antwerpe, and the colour called "silver dun" by their admirers is barred with red, and is totally different from silver. A silver Pigeon has the flights, tail, and under parts darker than the shoulders of the wings, two dun bars on the wings, and one on the tail. A mealy (silver dun) has the flights, tail, and under parts lighter than the shoulders of the wings, two red bars on the wings, but none on the tail.

The colours of the ordinary Pigeons seen in Britain may be stated as follows:—

### NATURAL COLOURS.

1. Blue, with flights, tail, and under parts darker than shoulders, two bright black bars on the wings and one on the tail.

2. Blue Chequer, with flights, tail, and under parts darker than the ground colour of the shoulders, which are densely chequered by dull black, two dull black bars on the wings, and one on the tail. These two colours may be called "the original Blues."

3. Mealy, with flights, tail, and under parts lighter than shoulders, two bright red bars on the wings, but none on the tail.

4. Mealy Chequered, with flights, tail, and under parts lighter than the ground colour of the shoulders, which are densely chequered by dull red, two dull red bars on the wings, but none on the tail.

These two colours may be called "the original Mealies." Silver, with its sub-varieties, up to and including dun, is derived from the blues; and buff, with its sub-varieties up to and including yellow, is derived from the mealies.

I submit the following table of nomenclature in the ordinary varieties of colour to your readers.

BLUES.	{	Blue, Blue Chequered, Black Blue, Black-blue Chequered, Black.
		Silver, Silver Chequered, Dun Silver, Dun Silver Chequered, Dun.
MEALIES.	{	Mealy, Mealy Chequered, Red Mealy, Red Mealy Chequered, Red.
		Buff, Buff Chequered, Yellow Buff, Yellow Buff Chequered, Yellow.

I am obliged to "REPORTER" for the trouble he has taken to answer my inquiry, and hope that he will not hesitate to express his opinions under the general head of "Pigeon Nomenclature."

I notice that Mr. Lyell calls a blue chequer by its right name, and therefore beg to ask him why, if a blue Pigeon chequered with black be a blue chequer, a silver Pigeon chequered with dun be not a silver chequer?—TURKEY QUILL.

## SEATON BURN POULTRY SHOW.

THIS was held in a large tent well suited for the purpose. The quality of the birds as a whole was very superior. The number of pens was 152.

The Cochins were very good both in colour and symmetry. The Brahmas were all Dark, except one pen; the prize birds were short in the leg, well feathered, and good in pencilling. The Spanish were only a middling lot, not being good in comb, and too short in the face. The Game were the best classes in the Exhibition, and besides the three prizes in each class, several pens were highly commended. Great credit is due to

the Game-breeders in the locality. The *Hamburgs* were an average lot. The Single cock class contained seventeen entries. The first was a really good Buff Cochins, the rest were Games. The *Bantam* classes were well filled, and some good birds were amongst them. The prize *Rouen Ducks* were large, and in good condition.

We published the awards last week.

### ROUP REMEDY.

My plan is to take four or five drops of solution chlorinated soda in a teaspoonful of cold water, and turn it down the throat of the fowl or chick, while another person holds its bill open. Also to wash the bill and nostrils thoroughly (if the whole head gets soaked so much the better) in warm water containing a few drops of the same solution. It is perfectly harmless, and I have never failed to cure, though I sometimes have to administer it two or three times a-day for a number of days. It is well to bathe the head in clear water after, to remove the solution from the eyes of the bird. So simple and still so invaluable a remedy as this has proved to me, may be of some use to others.—(*Pet-Stock Bulletin*.)

### LOSS OF BEES IN HIVES CONTAINING HONEY.

Your correspondent, "DUFFER," having lost one of eight stocks, wishes to know why the bees deserted the hive with plenty of honey in it? As many other bee-keepers are often in like misfortune, and puzzled to know the cause of such losses, a short article may be devoted to the consideration of the subject.

There are so many causes of the deaths of stock-hives, that it is not to be expected that anyone who has not seen the hives can state with certainty why deaths or desertions have taken place. It is necessary for a doctor to have seen a patient before he can safely give a certificate as to the disease that carried him off.

1. Queen bees live four years at most. Many die when three years old, and some few when younger. If a queen dies when eggs are in the cells, the bees of the hive have it in their power to raise a successor to the throne; but if she dies when there are no fresh-laid eggs in the hive, the bees are unable to raise a queen, and will therefore gradually dwindle away till all be gone.

2. If a queen is hatched when there are no drones in a hive she is useless for breeding purposes. Her presence will keep the bees together till they die of hard work or old age. Again, queens are never mated inside their hives. They leave their hives with a view to meet with drones when they are a few days old, and if not mated the first fortnight of their lives, they are ever afterwards incapable of laying worker eggs. Drones do not leave their hives during inclement weather, and many queens are never mated at all. These are called drone-breeders, from the fact that they lay a few eggs which hatch into drones. With such queens all hives soon become tenantless.

3. Take another case. Hives that swarm late in the season, say July, have hardly time enough to rear young bees in sufficient number to make their hives strong for the winter. The laying queens, of course, go with the swarms, and the young queens that succeed them do not commence laying till about three weeks after the swarms have left. Allowing ten days in their cells, and ten days out before they begin to lay, working bees are three weeks in being hatched, and die of old age at nine months. Late swarmers, if not helped by receiving young bees from other sources, are often very weak in bees in spring, and some altogether die out.

4. Sometimes hives that do not swarm at all become so filled with honey and farina that the bees have not comb enough for breeding purposes. Such hives should not be kept for stock. With one-half less honey and two-thirds more bees they would make excellent stocks.

5. Diseases of various kinds sometimes affect hives to a dangerous extent. Dysentery often thins the populations of bee hives. Watery honey, or improper food, damp hives, or something else may be the producing cause of dysentery. Foul brood always weakens hives, and sometimes afflicts and discourages the bees so much that they often leave as swarms never more to return. Other causes could be named that not infrequently thin the ranks of our favourites materially.

The intelligent reader will, on perusing the above remarks, see how important it is to examine his hives often and thoroughly, to note the age of all his queens, never to risk keeping a good hive with an old queen, and vigilantly to watch the state and extent of the brood in his hives at the end of summer. If a hive has eight or nine combs half-filled with brood in August, and is otherwise healthy and provided for, it will be a strong one in the following spring. As the buds of our fruit trees are ripened for the following spring by the suns of autumn, so hives of bees properly managed in autumn are prepared for suc-

cessful work during the coming year. To have large hives well filled with bees in autumn, is a move that would lift many bee-keepers out of the region of bad luck. And the reader will please to bear in mind, that large hives well filled with bees consume far more honey or food than those containing few bees. The Swiss clergyman and all his followers could not have made a greater or more dangerous mistake than they made in asserting that forty thousand bees in a hive do not eat more food than twenty thousand, for bees consume food, like other creatures, according to numbers. In open winters more food is eaten by bees than in colder ones. Hence, it is wise to give hives a little more than is absolutely necessary in ordinary seasons.—A. PETTIGREW, *Sale, Cheshire*.

### TRANSFERRING BEES.

BEING a tyro myself in the art of bee-keeping, I desire for the benefit of other novices to relate my experience and mishaps in transferring a stock of bees from an old-fashioned bell-hive into a square hive paneled with glass.

I have sundry books on bee-management, but in none of them do I find any information as to the best time or the proper manner in which to transfer bees in the above-described way. After considering driving, fumigating, and chloroforming as the best means to attain my purpose, I decided on the last-named; and also thinking that the operation had best be performed before the queen had laid eggs to any extent, as there were grubs in the combs which might get damaged in the transference from one hive to the other, I determined one day last month to set to work. And here let me advise those who attempt a like experiment to take care that the "one day" be a fine one, for to my impetuosity and stupidity in changing hives on a very wet day may be attributed the disasters I am about to relate. My old bell-hive contained a very strong swarm of the past year. This hive had been very snugly situated in the shadow of the house facing north during the winter, so very few bees had died, and very little food had been consumed. In one of my books, where chloroforming bees is recommended in a general way, I found that a quarter ounce was the proper quantity to use to stupify a large hive. So after putting this quantity into a saucer, and covering with perforated cardboard to prevent any drowning, I lifted the old bell-hive off its stand, placed it over the saucer, and awaited the result with trepidation (notwithstanding my bee-dress, which failed in this my first experiment to inspire courage) and considerable anxiety.

After one great buzz had been heard a dead silence prevailed inside, but as I thought in my ignorance that the bees were perhaps shamming and would make a great rush out, to my discomfort, if I lifted the hive off at once, I left it alone for perhaps five minutes. When I did raise the hive an intolerable smell of chloroform assaulted my nose, so strong as to convince me my poor bees had been overdosed and perhaps completely killed. Here was a nice mess! Instead of being able quietly to put the new hive over them and allowing them leisurely to return to animation as I anticipated, while I removed the combs from the old hive into bars of the new one, I had the resuscitation of the bees as well on my hands. I made all the haste I could to cut-out the combs, and left off the top of glass hive, now over bees, meanwhile to let the fumes of chloroform escape. Then it was I found the evils caused by the rain, for the lower strata of bees (the mass which had fallen was quite 2 inches thick), were completely saturated with wet, and so all chance of their revival was at an end. After placing the combs, which I had much bruised in my hurried removal, on one side, I was about turning my attention to my wretched bees, when I heard a curious noise proceeding from under a comb. I turned it over, and beheld to my extreme grief the queen apparently dead, with three or four workers which had escaped unhurt, running over her, feeling her with their antennae, and generally showing signs of the most affectionate solicitude. This was the climax to all my troubles. I thought it was useless now to try any means to revive the other bees, for what pleasure or profit would life be to them without their beloved mother? A happy thought struck me. I took the queen and her faithful attendants up in my gloved hand, and, covering them with the other, I warmed them as much as possible. Soon I had the immense gratification of seeing the queen feebly moving her legs and antennae, and after a while restored to complete animation. Finding warmth so effectual in the queen's case, I immediately took the hive into the dining-room and placed it before the fire. It was a long time, however, before the unfortunate inmates completely recovered—some three or four hours indeed; and the lower strata to the number of some three or four thousand, as far as I could judge, never came round at all, from the causes before stated. I trust what I have said will warn my fellow novices, when chloroforming, not to overdose, and to beware of a rainy day while operating.—F. R. L.

NORTHAMPTON POULTRY SHOW.—This is not an ill-managed Show, and has hitherto deserved notice for the birds being well

fed, returned quickly, and money paid to stated date. May it and all other shows managed like it flourish.

## CRYSTAL PALACE BEE AND HONEY SHOW.

If my letter on the above is calculated to injure honourable and profitable apiculture, I beg leave to apologise most sincerely both to Mr. Symington and all other apiculturists, for nothing can be further from my intention. I may be wrong, and if so, shall be glad to be put right; but I have an idea that all this to-do about "most improved" hives and breed in bees is mere moonshine, except to the vendors of those hives which are the acme of perfection, and those fine strains in breed which are to revolutionise the profession altogether.

I understood the schedule was simply a proposed one, and that criticism was invited, and as such I took the liberty to review it and state my opinions. As Mr. Symington's views differ from mine, and as he has given reasons for some of those views, perhaps you will kindly allow me to answer some of them. As an amateur bee-keeper, I admit that I should consider the honour to win a prize at the Show far greater than the money appendage, but I think that out of such a handsome prize fund the Show might have been made more national by reducing the number of classes and increasing the money value of the prizes, thus inducing those who seek profit as well as honour to come from a distance.

Then as to the definition of hives. Mr. Symington says that there is a class for every kind of hive in use, from a "straw skep to the most elaborately-constructed bar-and-frame hive," but I notice the skep is in connection with the box, and I contend that the skep comes nearer to what Mr. Symington desires than any box can do—viz., simplicity in construction, ease in manipulation, and likelihood to secure a good yield of honey; but a maker or vendor of fancy boxes, &c., may say differently, "for love is blind, and self has a long arm." Of course, if amateurs have a desire for something in the fancy line, by all means let their desire be gratified; but it really is too much to recommend their "fancy goods" to the cottager as being the most profitable.

What will the importers and vendors of Ligurian queens say to Mr. Symington's next answer? If there is no certainty that handsome queens produce handsome progeny, &c., why should their relative value be more? The fact must be that it is all a lottery and should be a caution to intending purchasers.

Then there is this "largest breed." Mr. Symington accepts the idea of their being able to do more work, but wants proof that they will require more support, and then confines "any nationality" to two and a hybrid. When I was at Manchester I heard one of the Judges talk about African and Egyptian bees, some kinds being brown with white stripes instead of the yellow as in the Ligurian; and I in my ignorance, when this "largest breed" was mooted, thought there might possibly be some kind as large as humble bees. Then it is thought likely that continental breeders may come hoping to make a trade of the progeny of "prize strains," whereas, according to Mr. Symington's own showing, it is all uncertainty of like producing like.

I am glad Mr. Symington admits that Class Q in honey is introduced as a premium to purchasers of the extractor, because, if I mistake not, I have seen a letter of his elsewhere stating that honey so obtained is inferior to run honey.

I am glad to hear that there are many cottagers that keep bees in the neighbourhood of London, and wish the same could be said of all our large towns.

Mr. Symington concludes that I am against improvement because I believe in the straw hive. Nothing could be further off the mark. By all means let there be a trial to improve, but let the improvements have a satisfactory status before they are puffed off as the *Al* in apiculture; and I ask, Which is the most advanced bee-keeper—the man who obtains a given amount of honey from a hive costing, say, 7s., and taking little time to manage, or the man who spends several times that amount and gives more time to secure the same result? If Mr. Symington can show me how I can obtain more honey and wax than I now do at less cost I shall be much obliged to him.

If it be true that fertilisation of queens always takes place when on the wing, how can you be certain of its being with a selected drone unless you see it? I can but imagine one way of securing it if it can be done at all; that is, get your queens and your selected drones and steam away into mid-ocean beyond the power of the bees reaching land where other bees are, and I think that would not be profitable: so that is how I make it out profitless and uncertain.

There are unfortunate occasions when we see men attempting to do things which we can only pity or laugh at them for; and if we saw a man attempting to "cure rotten eggs," that surely would be such an occasion. No doubt there are men bold enough, as the one quoted, to bring recipes out for the cure of all diseases. It was so in the cattle plague; but the best remedy was

found to be to stamp it out wherever it occurred, and so it will be found with foul brood, if infectious as reported.

I must now conclude this long letter with stating that I have faith in my brown bees and Pettigrew straw hives, and shall not shrink from—nay, I invite—a public trial on fair and equal terms for honey and profit between my brown bees and those of any nationality, and my Pettigrew straw hives and those of any other kind however elaborately constructed.—THOS. BAGSHAW, *Longnor, near Buxton.*

## VARIOUS MODES OF FEEDING BEES.

It is well known that thousands of hives of bees have perished from want of food during the autumn and winter. If bees obtain food enough it does not matter much how they get it. I have never, so far as I can remember, lifted my voice or pen against any mode of administering food to bees, knowing well that almost all apiarists from the highest to the most humble follow their own convictions and practice in this matter. Having many hives of bees and but little time to spend amongst them, the easiest and speediest ways of feeding and managing them are here invariably adopted. If many of the readers of this Journal were to witness giving 30 lbs. of syrup to thirty hives in less than half an hour, they would probably marvel at the easy and speedy mode by which it is done. If they were to see half a dozen hives swarmed artificially, and all the swarms properly hived, placed, and covered within an hour, their notions as to the difficulties of bee-management would at once be materially modified. In this letter the aim is simply to describe some of the many modes of feeding bees.

1. *Feeding from the Top of Hives.*—This is a safe mode, and may be done in many ways. In all cases of feeding at the top the crown hole is opened, and through it the bees carry down into the hive the food given. What is sometimes called the Lancashire bee-feeder is a circular trough, about 9 inches wide and 3 or 4 deep, with a tube through it, and a wooden float in the trough. The bees go up through the tube on to the float. In using a feeder of this kind for the first time, it is desirable to drop a little of the food amongst the combs and bees, and thus entice them to go up far more.

Another mode of administering food at the top is by a wide-mouthed bottle, the mouth of which should be covered with a bit of net cloth or lino, and then inverted on the crown hole of the hive. The bees suck the syrup through the cloth, or catch it as it oozes out.

A third method is to have a straw super or small hive filled with empty comb. By pouring the syrup over the combs, and then placing it over the crown hole, the bees speedily carry every drop of syrup below, leaving the super of combs quite empty, and ready to receive a fresh supply. This is a very simple and natural way of feeding in spring and autumn. If used in summer the bees would not leave the combs of their own accord. Those who have neither bottles nor Lancashire-feeders may succeed without them, in feeding at the top of their hives, by dipping a few pieces of empty comb in syrup, and then laying them on the tops of the hives, and covering all up with straw supers or small hives.

2. *Feeding Below.*—The tin trough, about 1 foot long and less than half an inch deep, holding about half a pint of syrup, is an exceedingly handy appliance for feeding bees during the spring months. It is placed on the flight board, filled, and pushed into the hive by the door. Some people fancy that the tin trough will attract robbers. We have used it for fifty years without attracting robbers. It is used at night or in cold weather when bees are not flying about.

The feeding-cistern with a trough attached to it holds about a quart, and is also used at nights. The cistern supplies the trough as the bees take the syrup, till all is gone. Both of these appliances can be used without uncovering or touching the hive to be fed.

A feeding-board is used when large quantities are given to a hive. It is made by cutting a circular hole, 10 inches in diameter, out of the centre of a floorboard, and fitting in a tin trough about 1½ inch deep. There is a channel to the edge of the board connected with a funnel, by which the trough can be refilled without touching the hive. Our feeding-board holds three quarts, or 6 lbs. of syrup, and is frequently used in filling supers with honey artificially. When hives are not filled with combs I often use soup-plates, pie-dishes, and flower-pot saucers in feeding the bees. When used, a few chips of wood are placed as floats on the syrup to keep the bees from drowning, and they answer admirably.

As most of our hives are at a distance from home during the swarming, we use tin dishes made to order for feeding swarms. When a swarm is hived, one of these dishes is filled with syrup and placed on the board, inside of course; and if the weather is unfavourable for honey, the dish is refilled, and thus the bees are furnished with materials for comb-building. These materials (sugar and water) are cheap, and when used prevent the waste of so much honey in comb-building. To feed young swarms,

and thus give them scope for breeding, is a stroke of policy and good management, the importance of which is not yet generally understood.

There are many other appliances used and modes adopted in feeding bees. The exercise of a little ingenuity on the part of the reader may enable him to make improvements on any one of them, and to introduce other modes for all seasons, equal to any that have been practised heretofore.—A. PETTIGREW.

### OUR LETTER BOX.

**BRAHMA'S LEG-WEAKNESS (Dover).**—We are seldom troubled with leg-weakness. We attribute much of it to the use of bad food, and to bad feeding in the earlier stages. Birds of large growth require much while they are young, and should have it frequently. We adhere entirely to plain food, and seek as much as possible to choose it as nearly like that which a bird finds when at liberty as possible—ground oats, barleymeal, and some whole corn; plenty of green food. Some when young get lanky and knock-kneed, we eat them. Birds that show leg-weakness at this time of year are ill or underfed. What is the flooring of your house? If stone, wood, or brick, it may be rheumatism from which they suffer.

**SPANISH PULLETS LAYING IRREGULARLY (I. L. W.).**—It is possible your pullet lays her eggs with difficulty; that would cause her to squat about, dropping her hinder parts to the ground till she is relieved. Examine her when squatting; if you can feel the egg, pull out one of her wing-feathers, dip it in oil and pass it in till it meets the egg. This will give immediate relief. If this is not the case, she is injured in the back. In any event the oil will do good.

**DISEASED LIVER IN FOWLS AND RABBITS (Agnes).**—Liver disease in fowls is caused by over-fattening or by injudicious feeding, it is also caused by poor food. Potatoes cause liver disease, but they make fat liver. Rice, bad corn, constant stimulating food produce the liver you mention in fowls. Rabbits are very subject to it, and it may be traced to the same cause—improper feeding. They want variety, and when they have not a supply of root food, such as swedes, mangold, &c., they should have water. We believe many of the diseases to which they are subject would be avoided if they were supplied with water.

**PARTRIDGE COCHIN'S PLUMAGE (T. J.).**—We should be sorry to doubt the purity of the bird you mention; but it is a defect for a Grouse cock to have white feathers in the wing. Unless, however, you are breeding for show, you may use him with confidence. The pullet you have bred will always be liable and likely to go back to the original buff, and will, while they are Partridge-feathered, have a yellow tinge on the marking of their feathers.

**ANDALUSIANS' FACE AND LEGS (S. F.).**—The ear-lobes and face of the Andalusians should be red, but they are seldom so entirely. The white is generally in the upper part of the face. The legs should be dark lead colour.

**LICE ON CHICKENS (W. H. S.).**—The chickens get the lice from the hen. Let them have when they are off plenty of dust and grit mixed with powdered sulphur. They will take their dust-bath, and the vermin will soon disappear. Of what material are your nests? Are they on the ground? Old baskets and hay rubbish at the bottom for nests always breed lice and fleas. Put your hens and chickens out of doors, and let them be on the ground. Give them the opportunity of running in the grass, and they will get rid of the pests. Neither hens nor chickens will do any good till they are free from them.

**ANDALUSIANS AND HOUDANS (J. H.).**—Andalusians are not good sitters. Their chickens are to our taste neither so quaint nor so hardy as the Houdans. As a rule, the early pullets of every breed lay in the winter. The Andalusians lay a larger egg than the Houdans, the latter are the best table fowl. You will not get any fowls to lay largely in the winter unless they can have more than half an hour's liberty per day. It is hard work for them to lay in the winter, and they want all the help they can have.

**BOOKS (Dot).**—Mr. L. Wright's is by far the best.

**GOOSE BECOMING BROODY (W. C.).**—She ceases to lay and takes to the nest.

**BRAHMA MISDESCRIBED (Nostaw).**—The bird you describe, and that described in the vendor's letter, are two and very different birds. No one is justified in praising a Brahma cock if it is nearly white from the breast to the feet. We should have mistrusted such high-flown description. We see little that is "splendid" or "superb" about an ordinary fowl. Everyone has a right to his opinion, and men differ. Return the bird, and no doubt the gentleman will return the money.

**BRAHMA PULLET'S TUMOUR (A. H. M.).**—It is not an uncommon thing for fowls to have tumours such as you describe, and similarly situated. They are difficult of cure, but she will not lay while it exists. If it is quite hard, we advise you to kill her; if it yields to the touch, make a small incision with a sharp knife and see what it contains. Discontinue all fattening food under any circumstances, at least all those you have named. The fowl is quite fit for culinary purposes.

**BRAHMA'S VENT INFLAMED (W. S. L.).**—Separate your hen from the others. It is more than probable they pick it. Does she lay? The formation of these water-bladders is common in hens, but very unusual in pullets. Continue the soft food, give scantily of water, and administer a table-spoonful of castor oil every alternate day for a week. An operation may be performed when the laying season is over.

**INFLUENCE OF MALE (K. J.).**—It is a disputed point. All will say ten days; we say three weeks if the breed is valuable and you wish to be sure of it.

**FOWLS FOR NEAR LIVERPOOL (D. E.).**—If you take up the bricks in the yard, and if you always have the use of the field, you may keep Dorkings. No county has done so more successfully than Lancashire. If, however, you cannot do away with your bricks, you may have Brahmas, Cochins, or Houdans; we advise the first. If you are ever confined to the yard, when that is the case you must cover a good part of it with earth some inches thick. *MSB 287C.*

**DORRING AND BRAHMA CROSS (A. Subscriber).**—The most approved cross is between the Brahma cock and Dorking hens.

**FOWL'S FEET SWOLLEN (A. M. G.).**—Either your fowls perch too high and bruise the balls of their feet when they fly down, or some small sharp substance has penetrated the skin and caused inflammation. If there be only "a watery bladder" open it; if there be inflammation poultice it, and in both cases shut them up where they will walk only on hay or straw till their feet

are hardened. If they have been roosting high shift their perches, and bring them within 2 feet of the ground.

**SPANISH FOWLS OUT OF CONDITION (G. F.).**—The fowls are manifestly out of condition to a serious extent. Rub the combs with sulphur ointment. Give each of the birds a table-spoonful of castor oil at once, and repeat the dose every alternate day for six days. Feed on soft food; give some bread and ale twice every day, and supply them with green food—lettuce, and large sods of growing grass cut with plenty of earth. You do not say if they are at liberty or in confinement.

**DISINFECTING HEN HOUSE (Lemon Buff).**—Whitewash it with a creamy mixture of chloride of lime and water.

**RED JACOBI'S BREEDING BLACKS, &c. (S. A. B.).**—This is not unusual as Blacks and Reds are frequently bred together to get the red of a deeper colour, and one result is that a pair of Reds so bred will often throw Black young ones, and *vice versa*. The eyes should be pearl, but not unfrequently they come odd-eyed, or, indeed, neither of them pearl if not well bred; in the former case the young often come all right. Your birds would not have left their home to roost elsewhere at night unless they had been frightened, most probably by a cat. Shut the birds in by net or wire, and watch for and kill the cat.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barometer at 32° F. (sea level).	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temp.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
March.										
We. 18	30.049	48.1	48.0	W.	45.0	68.3	46.5	99.0	45.8	0.00
Th. 19	30.082	44.1	41.8	W.	44.2	68.5	34.0	76.3	31.7	0.010
Fri. 20	30.024	45.7	41.1	N.W.	48.7	60.1	37.1	78.9	35.0	—
Sat. 21	30.178	45.6	42.6	S.	42.8	55.0	37.9	78.6	35.8	—
Sun. 22	30.1.9	51.6	50.2	N.W.	41.2	68.2	43.9	79.8	41.9	—
Mo. 23	30.300	50.2	50.0	W.	45.7	65.4	46.5	102.3	44.8	—
Tu. 24	30.545	49.6	43.8	N.W.	47.2	60.2	41.5	98.6	42.6	—
Means	30.156	47.0	45.4		44.7	67.2	41.1	86.3	39.6	0.020

### REMARKS.

18th.—Rain in the morning, but soon cleared off, and very fine after.  
19th.—White frost early; cloudy about 1 p.m.; rain at intervals after 4 p.m.  
20th.—Very fine in early morning; cloudy at noon, and cold afterwards, but no rain.  
21st.—Hazy morning; fair all day, but not bright.  
22nd.—Rather dull, no sun; a few drops of rain in the evening.  
23rd.—A most beautiful day throughout, not merely spring-like, but almost summer-like; bright, warm and without wind.  
24th.—Morning rather hazy, but soon clearing, and getting brighter and brighter from noon to night, but not quite so bright as the preceding day.

The warmth and brilliancy of the 23rd forms a striking contrast to the cold and snow of some of the days in the last week, the mean of the 23rd and 11th differing, even in London, by more than 20°. The mean temperature of this week is about 7° above that of last week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—MARCH 25.

No alteration worth much notice, demand and supply being about equal. Importations are well kept up, and a good supply of St. Michael's Pines are again on the market—capital fruit, ranging from 3 to 5 lbs. each. Some new Grapes from pot Vines are offered, but do not equal the best samples of retarded ones; of the latter, however, there is a great deal of rubbish about, selling as low as 2s. per pound.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	4	0 to 3	0	Mulberries.....	£ lb. 0 0 to 0 0
Apricots.....	doz. 0	0	0	Nectarines.....	doz. 0 0 0
Cherries.....	£ lb. 0	0	0	Oranges.....	£ 100 4 0 to 16 0
Chestnuts.....	bushel 10	0	0	Peaches.....	doz. 0 0 0
Currants.....	4 sieve 0	0	0	Pears, kitchen.....	doz. 2 0 0
Black.....	do. 0	0	0	Pears, dessert.....	doz. 3 0 10 0
Figs.....	doz. 0	0	0	Pine Apples.....	lb. 5 0 8 0
Filberts.....	lb. 1	0	1 6	Plums.....	4 sieve 0 0 0
Cobs.....	lb. 1	0	1 6	Quinces.....	doz. 0 0 0
Gooseberries.....	quart 0	0	0	Raspberries.....	lb. 0 0 0
Grapes, hothouse.....	lb. 2	0	20	Strawberries.....	£ dz. 1 0 2 0
Lemons.....	£ 100 4	0	12	Walnuts.....	bushel 10 0 16 0
Melons.....	each 0	0	0	ditto.....	£ 100 2 0 2 5

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz. 8	0 to 6	0	Manhrooms.....	pottle 1 0 to 3 0
Asparagus.....	£ 100 4	0	10	Mustard & Cress.....	punnit 0 2 0 6
French.....	12	0	20	Onions.....	bushel 4 0 7 0
Beans, Kidney.....	£ 100 2	0	0	Pickling.....	quart 0 6 0 0
Beet, Red.....	doz 1	0	8	Parsley per doz. bunches	4 0 8 0
Broccoli.....	bundle 0	9	1 6	Paranips.....	doz. 0 9 1 0
Cabbage.....	doz. 1	0	1 6	Peas.....	quart 10 0 0 0
Capicums.....	£ 100 0	0	0	Potatoes.....	bushel 3 6 4 6
Carrots.....	bunch 0	0	0	Kidney.....	do. 0 0 0
Cauliflower.....	doz. 3	0	8 0	Round.....	do. 0 0 0
Celery.....	bundle 1	6	2 0	Radishes.....	doz. bunches 1 0 1 6
Colewort.....	doz. bunches 2	8	4 0	Rhubarb.....	bundle 0 9 1 6
Cucumbers.....	each 1	0	2 6	Salsafy.....	bundle 1 6 0 0
Pickling.....	doz. 0	0	0	Savoy.....	doz. 1 0 2 0
Endive.....	doz. 2	0	0	Scorzoner.....	bundle 1 0 0 0
Fennel.....	bunch 0	0	0	Sea-kale.....	basket 1 0 2 6
Garlic.....	lb. 0	0	0	Shallots.....	lb. 0 8 0 0
Herbs.....	bunch 0	0	0	Spinach.....	bushel 2 0 8 0
Horsedradish.....	bundle 9	0	4 0	Tomatoes.....	doz. 0 0 0 0
Leeks.....	bunch 0	0	0	Turnips.....	bunch 0 8 0 4
Lettuce.....	doz. 1	0	4 0	Vegetable Marrows.....	0 0 0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 2—8, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.		Days.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.					
2	TH	Meeting of Linnean Society, 8 P.M. GOOD FRIDAY.	57.8	35.7	46.9	21	35	af 5	32	af 6	19	7	53	5	15	8	37	52
3	F		57.1	35.7	46.4	20	33	5	34	6	59	8	4	6	16	3	19	93
4	S	EASTER SUNDAY. EASTER MONDAY.	56.7	35.7	46.2	17	30	5	35	6	43	9	16	6	17	3	1	94
5	SUN		57.0	35.7	46.0	21	23	5	37	6	57	10	32	6	18	2	44	35
6	M	Twilight ends 8.44 P.M.	57.0	35.9	47.2	14	26	5	39	6	morn.	52	6	19	2	26	96	
7	TU		57.7	35.8	47.3	21	24	5	41	6	12	0	21	7	20	2	9	97
8	W	Meeting of Society of Arts, 8 P.M.	56.1	35.8	46.0	23	22	5	42	6	22	1	2	8	21	1	52	98

From observations taken near London during forty-three years, the average day temperature of the week is 57.0°; and its night temperature 35.3°. The greatest heat was 79°, on the 7th, 1859; and the lowest cold 21° on the 6th, 1851. The greatest fall of rain was 1.19 inch.

## BOILERS AND HEATING APPARATUS.

It is not without much hesitation that I give an opinion upon boilers, inasmuch as, with the exception of the Potato disease, I do not know of anything connected with horticulture that has caused more discussion or given rise to more widely opposed ideas. Ever since garden structures were first heated by hot water the character of the boiler, as well as that of the pipes, has been a source of controversy, and it is as far from a clear solution as it was twenty years ago. True, the character of the piping has been less discussed of late, and may be said to have settled down into so many feet of tubing of 4 inches in diameter inside, technically called 4-inch pipe. Rival boiler manufacturers, in setting forth the merits of their respective apparatuses, generally speak of the many hundred feet of such pipes their boilers are capable of heating, and some of the assertions made approach very nearly to the marvellous, but we seldom hear of those who have adopted such extraordinarily good bargains speaking of their economy of fuel. Let us now take a glance at what has been done in the way of warming buildings by hot water, and review some of the changes that have taken place in public opinion on the subject.

My earliest acquaintance with the heating of garden structures by hot water commenced in 1829, and a year or two afterwards I remember noticing a parish church of an average size being heated in the same way. The plan in those days was for the pipes to be large—some 8 or 10 inches in diameter, and the flow pipes to be laid perfectly level, with openings at places in the tops of the pipes, where, by taking off the lid, the flow of the water could be seen; and it was thought that the circulation was quickest when the top pipes were only about three-fourths full. The boiler in those days was also a capacious vessel, often square, with the bottom slightly arched, but not so much so as in the modern saddle, but it was doubtless the parent of it. A flow and a return pipe were placed one over the other at its sides or end. The boiler, I may add, had a loose-fitting lid at the top large enough for a man to get through, and was only filled with water sufficiently high to allow the flow pipes to be, as before stated, three-quarters full—in fact, the water was generally put into the pipes where the quantity could be seen. Simple as this plan may seem to be, I have a clear recollection of two lean-to vineries being heated in this way with as little trouble and in quite as efficient a manner as any I have had to deal with since, and this was some time about the passing of the first Reform Bill.

Subsequently other schemes were tried, differing more, it must be confessed, in the way of arranging the pipes or their substitutes than in the boilers; for patents for the open gutter as well as the tank were taken out, with, I expect, loss and disappointment to all parties; while square, flat, and half-circular pipes had their respective advocates. Neither was cast iron the only sub-

stance employed for the conveyance of the heated liquid, for copper, tin, and sheet iron were used. I cannot say that I ever saw the first-named, but I remember a forcing house heated with water that had to travel through closed-in boxes or gutters of sheet iron, not much more than 1 inch wide by a foot deep, looking exactly like as many inch boards set on edge, the idea being that the more outside surface there was the better; but it did not work well—not half so well as a plan something like it in which the water travelled in a continuous vessel like a 3-inch plank laid on the flat. This method was supposed to be better adapted for forming a shelf for plants, or for anything that was wanted; and its heating qualities seemed to be satisfactory, for, having occasion to visit the place not long ago, I found the apparatus still working after a service of thirty-five years. Other fancy pipes or modes of heating came into vogue for a time. One in which very small pipes of less than an inch bore were employed was strongly advocated; this was called the high-pressure system, in consequence of the water being closed in, there being no ventilation nor outlet, but a sort of air-tight chamber of moderate dimensions in which the steam might condense and return again through the pipes, its advocates asserting that it was unnecessary to replenish with water, as none escaped. This plan is in general too costly for garden structures, and has been limited to dwelling-houses and public buildings; but the pipes being liable to get much hotter than those of other hot-water apparatus, it has been pronounced dangerous, and some insurance companies object to its use, or insist on the pipes being a respectable distance from timber. This, however, is not always adhered to, for I noticed a new church heated in this way not long ago, where the pipes almost touched the woodwork. Still, this method is not adapted for garden structures, and the advocates of the tank system seem also now less loud in their praises of it than they were some twenty years ago; so that it may be taken for granted that with few exceptions the bulk of the hot-houses now erected and heated by hot water are warmed by 4-inch pipes, which seem to have usurped the place of all other kinds, and the ingenuity or experiments of those desirous of improving heating apparatus would appear to be now all centered in boilers.

Of boilers the last twenty years have given us great variety, and each form having its advocates, it is not an easy task to give an opinion on their respective merits beyond the hint to those about erecting them and who are not personally versed in the matter, that they had better not adopt any that is asserted to effect a great deal of heating with about one-fourth of the coal required by a good saddle boiler, for it is likely they will be disappointed. I do not mean to say that the saddle cannot be improved, but when the saving of fuel amounts to so large a proportion as three-fourths of the quantity, suspicion may justly be aroused, and the issue often warrants it. A saving of a smaller proportion ought to suffice for all reasonable testimonials of merit. Notwithstanding the vaunted qualities of new and improved boilers, a pound of coal can only give off a certain amount of heat, and

no more; and although a large amount of heat is unquestionably wasted in most heating apparatus, no contrivance yet adopted can utilise the whole, and the apparatus must be very defective indeed which allows so large a proportion as stated above to be wasted. As the best contrivances cannot prevent a certain quantity being lost in this way, we may take it for granted that no heating apparatus yet devised is faultless. One general law, however, seems to apply to such apparatus, and that is, where a considerable quantity of piping is to be heated, less fuel is required when it is accomplished by one boiler than by several; but other things often limit this, as the loss sustained by conveying the heated water through channels that do not want heating, which is often the case where the farthest house in a range requires to be heated and the nearer ones do not, besides, also, the inconvenience where any misfortune befalls the boiler or its connection when so much work has to be done. It is all very well to say that a second boiler has been fixed in reserve to meet such emergencies, but there are always pipes, elbows, or connections placed in such positions in a large apparatus that there is a liability now and then of a breakdown when the boiler cannot be used until they be repaired; therefore, too many houses ought not to be heated from one source alone.

Of the newer class of boilers claiming the attention of the public I have but little to say, as there are many of which I have not had any practical experience; but one that was brought before the public twenty-five years ago was, I think, deserving more notice than it has received. It was formed in the shape of a spiral screw, so that the flame in travelling upwards had to traverse a square flue, three out of the four sides of which were boiler, the other brickwork. This, from practical experience, I knew acted very well, as also did the old conical boiler; one that heats portions of the mansion here has done so for nearly thirty years, and does its duty still in an efficient manner. It has the advantage of being large, and is consequently not liable to the choking-up in the feeding place as small boilers often are. Other boilers have also their advantages, but I find the saddle, either in the old or in some of the improved forms, is after all the most useful, and consequently the most popular. Many and various have been the supposed merits of the different boilers invented, and which have been backed-up by testimonials from those whose opinion is worthy of notice, yet somehow these boilers fall into disuse, and are succeeded by newer inventions. Many years ago the tubular boiler was the fashion, but it certainly has not in all cases answered the expectations entertained of it, and it is not unfrequently removed to make way for the old saddle again. Other boilers have suffered a similar fate, and at the present time some attention has been given to a boiler heated from a fire which also acts as a sort of limekiln. Of the merits of this invention it is difficult to speak, but if I ventured an opinion it would be that its popularity will be of only short duration, as it certainly does not seem adapted for the majority of cases where glass structures require heating, and I shall be much surprised if a year or two do not consign it to neglect, if not oblivion.

It cannot be said that any mode of heating yet adopted is perfect, for in spite of all the contrivances brought to bear on the matter, a waste of heat always takes place, and to limit this waste to the lowest fraction is the aim of those who attempt the reformation of our boilers. To accomplish this object all kinds of vessels containing water have been subjected to the action of fire, and fire has also been used in other ways than in heating water, not the least important being the old flue; and where a cheap house is built merely to winter such plants as want protection from the frost, a flue is the most convenient mode of accomplishing that object. The general mode of heating glass structures required for forcing has for many years been by hot water, and the improvements in joints and the other features connected with the circulation of water seem to be so well understood at the present day, that the principal requirement appears to be a more economical boiler—one that will receive the whole of the heat the fuel is capable of imparting without any loss, or with the least that is possible, for the nearest approach to perfection that can be attained will fall short of economising the whole heat the fuel is capable of giving off. When combustion is so regulated as to insure the whole heat of the fuel being directed to the heating of the object, then, and not till then, shall we be able to say that our heating apparatuses have reached that verge of perfection which is the aim of all our boiler-makers; at the same time the apparatus should be of

that simple kind which requires the minimum of attention. How nearly we have arrived at this point in our most approved modes of heating is, of course, one of those matters on which opinions rather than facts too often guide our judgment; indeed, it is difficult to dissociate the one from the other. Be that as it may, there is no doubt but the various advocates of rival heating apparatuses each claim to have arrived at a higher degree of perfection than their neighbours. How far they all fall short of fulfilling what is required in this way is for the public to determine, but certain it is there is yet plenty of room for improvement.—J. ROBSON.

### AURICULAS.

I AM glad to see that "D., Deal," is calling the attention of florists back to their old but now almost discarded favourite, the Auricula. To anyone who has a taste for simple beauty a stand of these mountain gems has more attraction than the gaudy beds of flaring colours so much in vogue; but I fear that Nature herself has set a limit to the number of those who cultivate the Auricula by forbidding its rapid and extensive propagation. It is more than doubtful if the largest grower in the kingdom could supply a customer with blooming specimens of all the varieties contained even in "D.'s" short list. To supply a dozen customers would be simply an impossibility. Seedlings alone can be multiplied indefinitely.

Some thirty years ago I visited that veteran grower, Dickson, of Acre Lane. He complained of the increasing smoke of the locality, and the injury which it did to the plants. His compost was two parts loam, one sand, one peat, and two old manure (probably cow). This differs somewhat from other recipes, but the real difficulty lies in the different meanings which different persons attach to the word "loam." It may mean anything from the stiffest clay to a soil approaching sand. The thin turfy layer which is found upon chalk downs would probably be the finest soil, not only for Auricula compost, but for most purposes.

The great enemy of the Auricula is canker. It is with diffidence that I offer the suggestion that this probably commences either at the point where the tap-root has been shortened in repotting, or where offsets have been removed and the wounded part has been buried in the soil. Pounded charcoal should be applied to cuts, but I doubt if this is sufficient. The wounds in the stem may be dried and healed before earthing-up, but this cannot be done with the cut end of a tap-root.

Alpines are pleasing and healthy. Among blues *Conspicua* is good, but might be better, and with a view to improve it I crossed a flower with the show variety *Smith's Mrs. Smith*. Among the seedlings two turned out very good. The colour was beautiful, but the paste was yellow like the female parent. The habit of the plants also was quite Alpine.—G. S.

### LIQUID VERSUS SOLID FERTILISERS.

THERE are certain periods in the growth of fruit trees when they do not require stimulants—for instance, when they commence making roots in spring, also when the fruit on them is approaching maturity, and in the autumn when the wood should be ripening. On the other hand, during the first swelling of the fruit a little stimulant is generally beneficial. If the stimulant is mixed with the soil the trees, of course, have the chance of partaking of it continually; if it is applied with water, then it can be given just at the time the trees most require it. When ordinary manure is applied with the soil at the time of planting, the trees grow vigorously for a year or two and bear little or no fruit; when they become less vigorous and begin to fruit, the benefit of the manure, if they could then obtain it, might do them good, but it is decomposed and become a useless inert mass that rather tends to lower the temperature of the natural soil than otherwise. While it is decomposing it affords warmth and nourishment, but that is generally at the time it is least wanted. Therefore I do not think it is a good plan to mix ordinary manure with the soil in which permanent trees are planted. With plants that only remain one or two years in a place the case is different; by the time they have exhausted the manure they are removed, and fresh plants and fresh manure take their place.

I think it very important to have the soil of the right texture—neither too light nor too heavy and close, but in such a state that it may continue for an indefinite time to admit sufficient air and water. I have great faith in aëration, not by means of perpendicular pipes, but by good drainage and abundance of

water applied at rather long intervals. No dribbling or damping the surface when it is not really dry; it hardens it, and makes moss and lichen grow and the soil sour by choking its air-passages. When stable or any other kind of manure that is bulky and that decomposes quickly is mixed with the soil, the latter gradually gets closer as the manure decays, and in the end is in a worse condition for admitting air than it would have been without the manure. If it can be dug-up, and aerated, and manured afresh all very well, but with permanent trees this cannot be done, and therefore I say it is better to use no quick-decaying manure at all.

I have said that trees do not require a stimulant when commencing to make roots in the spring. They form a greater number of feeders in soil that is rather poor and is at the same time sweet. They will dart through a mass of the richest-prepared border into a gravel walk or cinder heap, and there ramify in all directions, not, perhaps, because the gravel walk or cinder heap contains sufficient nourishment for them for any length of time, but because they are satiated in the prepared border. Where the feeders are numerous, as they almost invariably are in a poor sweet soil, it may reasonably be supposed that liquid manure would have a very marked and immediate effect, and, if not used too often, would be highly appreciated at such critical times as when the flowers were setting or the fruit stoning. When the fruit is approaching its full size it will be of better quality if it is not too highly fed. Trees also ripen their branches and roots better and earlier in a soil that is not over-rich, and they are consequently hardier.—WILLIAM TAYLOR, *Longleat*.

## ROYAL HORTICULTURAL SOCIETY.

APRIL 1ST.

THE Council-room on this occasion was well filled, Roses and Cyclamens being especially attractive.

**FRUIT COMMITTEE.**—Alfred Smea, Esq., F.R.S., in the chair. Sir John Le Conteur, of Jersey, sent a dish of Pengethley Pear, which, in his communication, he stated is very fine this season, but those sent were not ripe. Mr. George Wheeler, of Warminster, sent a dish of a seedling Apple called Wheeler's Favourite, but the fruit had been gathered early, and being prematurely shrivelled, the Committee could not form a favourable judgment upon it.

**FLORAL COMMITTEE.**—Mr. J. Fraser in the chair. From Messrs. Veitch, of Chelsea, came a *Masdevallia* with green flowers profusely spotted with brown, as quiet in colour as *M. ignea*, Harryana, and Veitchii are brilliant; *Anthurium floribundum*, with small leaves and a white spathe; the fine double *Clematis* John Gould Veitch; *Oncidium fuscum*, with a pale lip having a large dead purple and brownish yellow blotch in the lip; Tea Rose Duchess of Edinburgh, noticed in our report of the last meeting; and *Boronia megastigma*, with maroon crimson flowers, yellow within, with a conspicuous green calyx, and highly perfumed. To this a first-class certificate was awarded. Messrs. Jackman & Son, of Woking Nursery, sent *Clematis* Duchess of Edinburgh, with pale lilac flowers, a cross between the patens and Jackmanni types.

From Mr. Williams, of Holloway, came a miscellaneous group consisting of Palms, Orchids, Ferns, and Amaryllids. Of the last *Oriflame*, vermilion with green bands at the base of the segments, had a first-class certificate. In the same collection were *Anthurium Scherzerianum Williamsii* with a white spathe—not, however, a pure white, as exhibited smaller than in the scarlet type, but this was probably owing to the smallness of the plant and other circumstances. *Anthurium crystallinum* was another handsome plant of the same genus with large leaves broadly silver-veined. Messrs. Standish & Co., Royal Nurseries, Ascot, sent a group of *Clematises*, *Cinerarias*, and *Lady Blanche* white Pink; and Mr. R. Smith, of Worcester, a dozen Japanese Maples, some of which had leaves of remarkably high colour.

Messrs. Paul & Son, of the Cheshunt Nurseries, sent a splendid collection of Roses in pots, which well deserved the cultural commendation awarded. Those in the finest bloom were *Camille Bernardin*, *La France*, *Annie Laxton*, *Cheshunt Hybrid* (Tea), very fragrant, and *Etienne Levet*, very large. Messrs. Paul and Son likewise contributed numerous cut blooms. Mr. Perkins, gardener to Lord Henniker, Thornham Hall, Suffolk, sent a box of cut blooms of *Maréchal Niel* of remarkable beauty. Mr. H. Bennett, Manor Farm Nursery, Stapleford, had a first-class certificate for *Rose* Duchess of Edinburgh, a good deal resembling *Baroness Rothschild* in colour. From the same exhibitor came also a stand of *Madame Jules Margottin*, somewhat rough, cream, with an orange-and-rose centre.

Mr. Goddard, gardener to H. Little, Esq., Cambridge Villa, Twickenham, sent a splendid group of *Cyclamens*, which was awarded a cultural commendation. Two beautiful varieties

called *Rose Queen*, purplish rose, and *Royal Purple*, approaching a Tyrian purple, altogether out of the ordinary run of colour, were awarded first-class certificates.

From Mr. R. Dean, Ealing and Bedford, came a group of bedding *Pansies* and *Violas*, notably good being *Viola White Swan*, together with several very free-flowering bedding *Polyanthuses*, as *Viceroy*, pale yellow, with an orange centre, and *Bride*, white, with an orange centre. *Fancy Polyanthus Purpurea*, from the same exhibitor, had a first-class certificate. Mr. Rudolph Barr, Tooting, and Rev. W. Kendall, East Lulworth, Wareham, sent collections of *Narcissus* in competition for Messrs. Barr & Sugden's prizes. From Dr. Denny, Stoke Newington, came *Zonal Pelargonium Imogene*, crimson scarlet, with purple-flushed lower petals, deeper and finer in colour than *Ianthé*. Mr. Bennett, gardener to the Marquis of Salisbury, Hatfield, sent specimens of *Cupressus Lawsoniana* in bloom, and the tree from which they were cut is stated to be quite crimsoned with it. Mr. Woodbridge, Sion House Gardens, sent fine examples of *Bamboo* grown there.

It is rumoured that negotiations are on foot with the view of holding a provincial show either at the end of summer or in autumn at Brighton; and from the spirit of the place, from the liberality which the railway company have always manifested on the occasion of the Brighton Shows, and from the energetic and successful manner in which these have been conducted, we have little doubt such an exhibition would be satisfactory in its results.

## THE WEATHER IN DERBYSHIRE.

As Mr. Record, of Vinters Park, gave us an account, in the *Journal* of March 19th, of the weather near Maidstone, in Kent, it will not be out of place to state how many degrees of frost we had in this neighbourhood. On Tuesday morning (March 10th), the thermometer was 11° below freezing, and a good deal of snow fell throughout the day; on Wednesday morning it was 7°, and on Thursday it was very raw and cold; frequent falls of snow and rain occurred during the day, and the frost entirely disappeared. The blossoms of the *Apricots* that were expanded are all destroyed; that was on the Tuesday morning, but there were very few in full flower, and what were not out are all safe. They are protected with *Spruce Fir* boughs. *Peaches* and *Nectarines* were not sufficiently out at the time, so that they are safe; and on all the trees there is a great show for bloom, and some of the best young wood I ever saw in old trees out of doors, some of them having been planted nearly thirty years. I always lay-in plenty of young wood during the summer from their centres to follow up the old, and cut a portion of it out every spring. There are very few places in Derbyshire where they can grow *Peaches* and *Nectarines* out of doors at all; they have to grow them under glass. I have not protected them yet. I cover them with common garden netting, suspended from under the coping, and looped to hooks on a rail at the top of the wall, and tied out to rails along the front of the trees, about 4 feet from them. When finished it looks more like a range of *Peach* houses from end to end. It is an excellent mode of protecting the *Peach* from frost. Wet as the season was last year I got the young wood well ripened, which is much in the trees' favour, as they withstand the cold and frost better in the spring. I generally get as many of the leaves off as possible with a broom in the early part of the autumn, so as to have the wood thoroughly ripened before the winter sets in, and the buds as plump as possible.—W. M. P.

## ESTIMATION OF ROSES.

I READ Mr. Radclyffe's contribution to the *Journal* of March 19th, and think he should have been more explicit about the new *Roses* named in last year's election. Out of the first six, which have a special interest for me as a small grower, he only mentions three, and by the general tone of his remarks reverses the judgment of twenty-nine eminent rosarians. As to the others, why not have said in what respect they are "simply miserable?"

In common with many, if not most, amateurs, I always receive the glowing praises which nurserymen give to novelties with considerable caution; but when fourteen or fifteen amateur rosarians agreed in placing *Comtesse d'Oxford* 1, *Etienne Levet* 2, and *Marquise de Castellane* 3, I thought myself quite safe in buying them, and Mr. Radclyffe's letter will stimulate the interest with which I shall watch my plants. I have only

to say, in addition, that I cannot endorse Mr. Radclyffe's account of Edward Morren. I have seen it in the gardens of two friends this year, and whilst I admit it is nearly as big as a cabbage, I do not think it so shapely as that useful vegetable should be if properly grown.—E. L. W., *Yeovil*.

#### WEATHER—FRUIT PROSPECTS—FORCING.

The weather of March 10th was very severe here (King's Lynn). The Apricot trees were well advanced in bloom, and they present the appearance even now of having been scorched. A few late blooms have opened, but they seem very weak. Other wall trees are injured, but not, I think, materially at present; the prospects for most kinds of fruit are now very good—better than they have been for some time past. Our Nectarines and Peaches in-doors, now stoning, are a fine crop. I have not had to thin so many out for some time. Grapes, likewise stoning, are a very good crop; others now blooming promise to be equally good.

The little discussion between Mr. Gilbert and Mr. Taylor was very interesting. My practice, which, perhaps, may be called no practice at all, has been just about midway, while I think the results are equal to either. I think the conclusion most persons will come to will be, that there is very little art or skill required; but, as Mr. Pearson once remarked, "None but fools have secrets."

Your remarks on the Mercury I can sustain. It is often very useful as a stop-gap for Spinach. I have found it growing in a wild state here in two places, though I have not seen it in any garden.

Is the Catherine Pear synonymous with the Windsor Pear, as "Green Catharine" would show it to be?—[No. They are both named in old lists.—Eds.]—JOHN PLATT, *Gardener, Hillington Hall*.

#### NOTES FROM MY GARDEN, 1873.—No. 6.

##### VEGETABLES.

ARE we any better off than our fathers were in the vegetable portions of our gardens? or are all the highly-vaunted improvements blazoned forth in catalogues mere windbags? These are questions which receive, as most questions do, differing answers. On one side we find the "*laudator temporis acti*," who sees no improvement, who abuses all catalogues, and hesitates not to pronounce them false and misleading; while, on the other side, we have those who think the gardeners of other days were old fogies, the produce they cultivated coarse, and the range of their *répertoire* limited indeed. But is not the golden mean here, as elsewhere, probably the true ground to take? for surely it can be indisputably proved that in nearly every vegetable that comes to our tables, either by the process of selection or by the obtaining of new varieties by seed, we have very great and marked improvements. Let me take one vegetable, of which all the gardening papers are full at certain periods of the year. Now, I am not going to endorse all the wonderful things that are said as to the earliness, the productiveness, or flavour of these new varieties. Many of us remember how good old William Barnes, in his blunt, honest way, used to laugh at them, and say if we were to believe all that is said as to earliness, that we ought to have Peas somewhere about Easter, for each variety was promised some days earlier than the earliest known. But can anyone be blind to the merits, as compared with the Peas of former days, of such kinds as Ringleader, or some of Mr. Laxton's new ones—Harbinger, for instance? Now, I last year grew, side by side, Ringleader, Emerald Gem, Dickson's First and Best, and Sangster's No. 1. As I am growing the first three this year, I could see no difference between the first two as to their earliness, although there is a vast difference in their appearance. Emerald Gem has a peculiarity in its foliage, in that it is entirely devoid of that bloom which Peas generally have; it grows from  $2\frac{1}{2}$  to 3 feet in height, it is moderately productive, and of good flavour. Ringleader (which is the same as Carter's First Crop) grows to about the height of 2 feet, and in my soil is as productive as one, perhaps, has a right to expect in so very early a Pea, although in the changes that are being made by hybridising we may expect to find a Pea which will both be productive and early. Dickson's First and Best is one of the numerous synonyms of Sangster's No. 1; perhaps it is hardly fair to call them synonyms, for they are rather selected strains of that variety—the same may be said of Sutton's Early Champion—and valuable Peas they are, giving

a fair crop, and as they ripen-off quickly, the ground is ready soon for Celery, or any other crop the gardener may wish to follow with. Another Pea, valuable for small gardens, although it does not do very well with me, is Beck's Little Gem, prolific, with good-sized peas of good flavour. In the same way is a Pea that was submitted to me last year for trial, and which I have again sown this year—Carter's Early Premium Gem; it seems to be more robust and prolific, and much of the same character. Advancer is another Pea I have always tried to have; it comes in after Early Champion, grows to the height of 2 feet, and is a well-flavoured wrinkled blue Marrow. Following it I have generally used Princess Royal, another of Dr. Maclean's varieties, and this year have Sutton's selected strain of it; it grows to about 3 feet high, is a strong and vigorous grower, and, like nearly all Dr. Maclean's Peas, is of good flavour. For general-crop Peas I grew last year Emperor of the Marrows, Maclean's Best of All, and Ne Plus Ultra. The first of these is synonymous with British Queen, to which there are a large number of Peas bearing the same relation. Best of All I found a most excellent Pea for a general crop, robust in growth, 3 feet in height, flavour rich, and, to my mind, better than Veitch's Perfection or others of the same class. As to Ne Plus Ultra, there is no need to say anything in praise of this the very best of all late Peas. For this year I have on trial some new and unnamed Peas, and also James's Prolific, Sutton's Duke of Edinburgh, and Berkshire Challenge, and on these, if spared, I hope to report upon by-and-by.

Of Broccolis I can say nothing, for the seed supplied to me was of the most mixed character, and an invasion of rats from a broken drain at the bottom of my garden deprived me of more than half of them. In Celery I used Leicester Red, a very excellent variety, and Sandringham White: both of these are excellent dwarf varieties. By-the-by, I do not think that it is of the least importance to get enormous sticks of Celery; what is wanted are good, sizeable, crisp heads. I have other varieties to try this year. Lettuce is a vegetable much in use with us, and from very early to very late I always like to have it. My first crop comes in under those admirable contrivances Looker's Acme Frame, and for this I find nothing better than Tom Thumb, or, still better, Sutton's Commodore Nutt, and to second it Hammersmith. I do not find that Cos Lettuces as a rule do in these frames, although for summer use I would never use a Cabbage Lettuce when I could get a Cos. I have found the Paris White Cos best; the difficulty, especially in dry summers, being to prevent their running to seed. Many varieties are advertised as not having this tendency, but all more or less do so. In Radishes I find for early work in frames Wood's Early Frame best; and for after-work none can, I think, compare with the French Breakfast Radish. Of Onions I grew the Improved Reading (Sutton's), James's Long Keeping, and Nuneham Park—all of them excellent, and I question if any better are grown.

I am never sure whether a Melon ought to be classed amongst fruits or vegetables, and it is one of those cases which show the difficulty of definitions. However, I may mention here that I tried Munro's Little Heath last year; and although I do not pretend to say that it is equal to Scarlet Gem or such high-flavoured varieties, yet I found it hardy, succeeding in a frame with very little bottom heat, and it was of very fair flavour. It was grown under conditions where Scarlet Gem would have never set a fruit.

I have thus run through most of the vegetables I grew last season; and although I do not pretend to add much to the stock of information on such matters, yet it may interest some one who has a small garden like my own to know what I have found to succeed with me.—D., *Deal*.

MR. J. DELANY.—With sincere regret we have to announce the demise of an excellent gardener and a truly upright man, Mr. J. Delany, of Brennanstown House Gardens, Co. Dublin. For more than twenty years he discharged, with credit to himself and advantage to his respected employer, George Pim, Esq., the duties of steward and gardener. In both capacities Mr. Delany was very successful. Perhaps the very finest and most successful examples of Pine-growing which ever came under our notice were grown by him at Brennanstown, his appliances for and mode of cultivation being as simple as they were successful. He, too, first showed in Dublin what could be done with the Azalea, and for several years the Royal Horticultural Society's cups for the finest examples of this lovely plant found

their way to Brennanstown. One of the traits in his character which we admired most was his devoted attachment to his employer, and we are glad to think that outside the widowed wife and orphan children none mourn his early demise more than Mr. Pim. This was shown by every kindness during his protracted illness, and every token of respect paid to his memory at the last.—(*Irish Farmers' Gazette.*)

## PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

### APRIL.

Royal Caledonian, 1st.  
Royal Horticultural of Ireland, 16th.  
Cambridgeshire, 23rd.  
Manchester Horticultural, 28th.  
Nottingham Horticultural, 29th.  
Fermoy, 30th.

### MAY.

Royal Oxfordshire, 6th.

Gloucester and Cheltenham, 7th.  
Glasgow, 8th and 9th.  
Bath, 13th.  
Royal Jersey, 13th.  
Royal Horticultural of Ireland, 21st.  
Cambridgeshire, 21st.  
Manchester, 22nd to 29th.  
Southampton, 25th.  
Devon and Exeter, 29th.

## TRIUMPHAL ARCH AT A WEDDING.

I AM anxious to erect a triumphal arch. The most available position is over the entrance gates leading to the village church, and I thought of fixing the arch on the stone caps of the pillars, making a provision for a couple of plants in bloom, a third to be placed on the centre. We have a lot of fine Centaurea plants, would not their silvery leaves do to mix in with the evergreens? Should there be a monogram or motto? If so, what would be suitable for a bridal occasion?—J. C.

[The plan that "J. C." seems inclined to adopt is a good one under certain modifications, and, I may add, amplifications. Just as a village church is the place of all others for a wedding, so the entrance gates to that church are at the most suited place for a triumphal arch. I would advise that the arch, though it actually begin from the stone caps of the pillars, should, to the eye, begin from the ground, by attaching evergreens, with flowers intermingled, to the pillars themselves. A monogram should certainly be in the centre of the arch, and on the side at which you approach the church—i.e., on the way in. All churches and all church decorations should look one way, but this arch, seen prominently on both sides, must be so made as to bear inspection from the church side as well. The monogram should be the bride and bridegroom's initials intermingled or crossed, and be of white flowers. On the top of the pillars the plants in bloom may be placed, but I rather fear they would to a degree spoil the shape of the arch; but the eye will tell this at a glance. As to using variegated leaves, let them be in clusters, as, if not, they make an arch look speckled, but bright green and bright flowers show best. Mottoes are apt to be too long and unmanageable, or short and meaningless: perhaps they are more suited to a flower show or a triumphal entry. Recently I was present at a wedding in a village church, and there was an arch a little way behind the wedding group, so arranged that all the party, veil-covered maids, best man, &c., were separated from the throng of lookers-on. The effect, to my mind, was better than an arch placed simply over the bridal pair, but much, of course, depends on the shape of the church and the internal arrangements.—WILTSHIRE RECTOR.]

## HEATING BY GAS.

SEEING in your Journal of August, 1873, a representation of a small gas boiler, I ordered the large size, 32s. My greenhouse is 18 feet long, 10 feet wide, and 11 feet high, span-roofed. The south end is built against a wash-house, which entirely keeps the sun off the end; on the east side it is built on a 6-foot wall, and is exposed to east and west winds. The inside arrangements are a centre stage with walk round, and a flat stage under the west window. I placed the boiler at the north end, and carried a 2-inch pipe under the west stage to the end, and back directly to the boiler, making 34 feet of piping. This kept frost out, even when, on March 10th, the thermometer showed 22° of frost. I have only one No. 4 burner to the boiler. I grow Ferns, Geraniums, Fuchsias, Lilies, Cinerarias, Primulas, &c. I use the boiler simply to keep out frost and damp. It did not cost 5s. for the last three months of 1873

for gas. I am very well satisfied with it. The above facts may perhaps be of use to some of your readers.—PRESTON, Lancashire.

## TOP VENTILATION.

IN answer to a query how this is best managed, we reprint details published long since by ourselves and Mr. London. The following plan has answered perfectly:—

Every alternate square next the top is framed (size 31 by 34); but, instead of being hinged, is pivoted just sufficiently out of the centre to cause the top edge of the frame to hang downwards when left to itself (fig. 1).

In this position what is generally known as "the up-and-down-cast" system of ventilation has full play; the rarefied air escapes in the direction of the arrow pointing upwards, and fresh colder air descends in the direction of the other arrow. And in wet

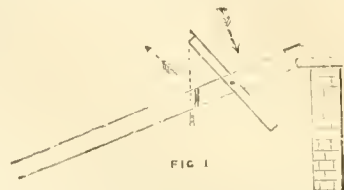


FIG. 1.

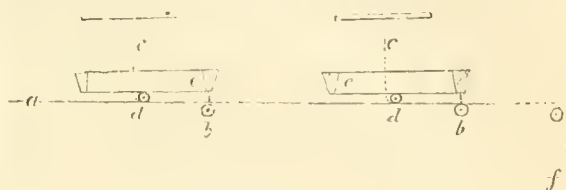


Fig. 2.

weather, or when showers may be expected, and the temperature is still comparatively high, if the pivoted frame be brought nearly horizontal, the bottom edge being very slightly lower than the top, there will still be an aperture of some 3 to 6 inches, varying according to the angle of the roof, at each edge of the frame; so that ventilation still proceeds in the same manner, though in a less degree, while—as the top edge of the frame is protected by the ridge-board, and the glass projects about an inch over the bottom edge of the frame—no rain whatever can enter the house.

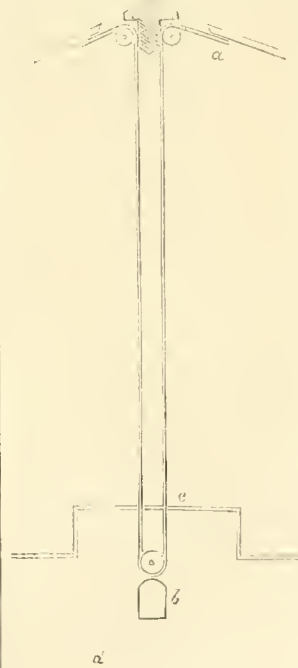


Fig. 3.

The amount of ventilation is regulated in this way: A quarter-inch wire *a* (fig. 2) is suspended on pulleys *b* from the rafters. A light chain *c*, about 18 inches long, is fastened to the bottom edge of each frame, passes under pulleys *d*, fixed to a cross-piece *e*, and is fastened by its other end to the wire. One end of the wire terminates in a piece of rather stronger chain *f*, which can be secured at any point by placing one of the links over a nail driven into the door-post. On account of the glazed frames being nearly balanced, the slightest effort moves the whole simultane-

ously. In a house 120 feet long half the frames are moved from one end, and half from the other, and a pull by one hand is all that is needed to close either set. As far as opening goes, that requires no effort at all; the chain *f* is released, and the top edge of each frame descends by its own gravity. If the frames were made to overbalance the other way, as may seem more natural—that is, with the bottom edge to hang

downwards, no top air could be given in wet weather without rain coming in; nor would the roof be watertight even when the frames were closed. The frames, also, when open, as in fig. 1, are better defended, by the tension of their chains, from the action of all wind but the north, than they would be if inclined in the opposite direction.

The following mode of hanging the roof sashes of a conservatory is worthy of imitation. It is on the principle of a self-balanced chandelier. A cord from each sash passes over a pulley (fig. 3, *a*), and is joined under the stage (*c*), where a weight (*b*), is attached to them by another pulley, and may either be limited in its descent by the ground (*d*), or by the length of line. By this arrangement, easily understood, either or both sashes may be opened to any extent by a very slight motion of the line, and without the least derangement of the plants, or unsightly fastenings of the cord.

### CISSUS DISCOLOR.

WHEN this old and well-known climber is well grown there is none that surpasses it in beauty. The soil should be a combination of sandy peat and strong fibry loam, with well-decomposed hotbed and old cow dung, and silver sand. Being a very rapid grower, it requires a rich soil. It also requires shading, otherwise the rich colouring will fade quickly. It loves plenty of atmospheric moisture. Care must also be taken not to syringe the foliage; wherever water falls it spoils the metallic lustre.

I have grown it in several ways—on a flat trellis, and on a wire balloon. Either way it is very beautiful. I have also grown it trained up one of the iron supports of the stove, together with *Thunbergia Harrisii*; the lovely blue flowers of the latter intermixed with the *Cissus discolor* had a charming effect.

It is propagated by cuttings of the young top shoots cut clean at the joint. Plant them in a pot with a bell-glass to fit, place over the hole a piece of charcoal or oyster-shell, and on this a layer of small broken crocks, and above this a small layer of moss, and lastly as much of the above-mentioned compost as will come to within an inch of the rim; fill that inch with pure silver sand, give a gentle watering, and as soon as the water has sunk and the sand is firm plant the cuttings, taking care to close the sand round each cutting, give a gentle watering, and put on the bell-glass. Every morning take off the bell-glass and wipe it. The pot should be plunged in cocoanut fibre refuse in a brisk heat, and shaded during the hottest part of the day.—F. P. LUCKHURST.

### TO YOUNG GARDENERS ON RENOVATING OLD FRUIT TREES AND OTHER SUBJECTS.—No. 5.

A TREE which is a "model of training" is often considered to be one in which the branches are carried in their several directions with great nicety, the brushwood being kept well in. But does this conduce to fertility or sterility, and does it improve the quantity or quality of the fruit? Does it not rather cause the deterioration of all that is most essential to the production of good fruit? If you doubt it, go into any garden where trees have been so treated for twelve or eighteen years, and notice the fruit—small, scabby, cracked, and deformed; compare them with the fruit growing on the young wood at the extremities of the branches, or with those on a young tree near, and mark the differences in size, shape, and hue, and when ripe the differences in texture and flavour. You will then, I think, endeavour to secure more young wood in your trees. We hear much about planting more fruit trees, but do we obtain the maximum quantity of good fruit from those which we already have? If we think so, let us examine the thousands of well-trained trees that are at present growing in our gardens, and I venture to say we must come to the conclusion that we do not. Why? Simply in three out of four instances because we persist in that hard-and-fast rule of what is called model training. We see trees covering yards of walls or other space, with just a few fruit at the extremities of the branches, the remainder of these being straight lines of luxuriant foliage and shoots.

It does not, however, follow that whilst securing young bearing wood we cannot have a tree with pleasing and graceful outlines. It can be a model of training, and yet be full of young wood, as, for instance, in the case of a Peach or Morello Cherry tree. We are startled every now and then by certain exhibitors never heard of before making a sweep of all the

prizes for fruit, and in a year or two they fall back to the level of their neighbours. Need we ask the reason of this? Or does it not at once suggest itself that the wood of those young Vines or Pears is now older, and produces a greater number of fruit, but of much less size? From this we ought to learn the wisdom of laying-in annually a succession of young wood. We may not be able to get such fine fruit from young wood laid in an old tree as from that on a quite young one (Cherries of the Duke and Heart tribe excepted), but we can, nevertheless, obtain far better fruit than from the old scrubby wood. We seldom think of renovating, except when a tree is not a model of training, and we think little of renovating to get abundance of fine fruit. We often delay displacing old branches for young, but those who wish can make a compromise by taking out every alternate old branch, and filling-up the whole space with young wood, to be removed as the young principal shoot grows; and when this is of the required length the old branch should be amputated, and the space again filled up as before from the young branch. By this system we serve two purposes: we retain a crop of fruit, and do not cause a sudden shock to the tree.

There are shoots with bloom-buds and others with none. We will suppose that those with bloom-buds will produce a crop of fruit; in the majority of cases in the following year the fruit spur throws out one or two weak growths, which of course are to be pinched-in, but it is many years before they are sufficiently strong to produce a fruit-bud. I believe not one in a score ever does. We get buds formed near them, and such, though weak, will produce blooms in a year or two. There are a few varieties, especially of Apples, which will form two bloom-buds a year after on an old fruit spur instead of the wiry shoots, but they are the exception. Though we cannot leave those weak growths on wall trees without being denounced as slovenly fruit-growers, we can leave them on bush, pyramidal, and similar trees, because they are almost certain, if left entire, to produce a bloom-bud at their end the second year, when we shall find them from 6 to 8 inches long. There are many varieties of Apples and Pears that will bear fruit in no other way but on the tips of these wiry shoots, and by removing them many fail in securing a crop of some varieties.

I have long come to the conclusion that very little good comes of pinching in summer, or pruning these weak shoots in winter, to within an inch or so, with a view of inducing them to put forth other growths. The eyes are so weak, that before they have time to collect energy sufficient to start into growth their stronger neighbours have run away with the food. Hence the numerous small dead spurs we find clustered together in trees that have been under a person who gives little attention to the subject. We have but two things to do: one is to take them clean out the first year; the other is to leave them until they have fruited and then clear them off, but never shorten them.

According to my idea, as soon as the shoot with the bloom-buds has performed its duty it is to be cut out, and the following year another young one laid in, and so keep up a succession of young shoots, having the tree full of one, two, and three, or, in certain chance cases, four-year-old wood. We may then reasonably expect a continued supply of fine fruit. This is no theory. I have carried the system out for some time with the best results in renovating old or neglected trees. So certain am I of the utility of the practice, that I can strongly recommend it to any person wishing to grow high-class fruit. It must be borne in mind that to keep up a good stock of young shoots to lay-in there must be a good border for the roots, otherwise, after a few years, I find the trees cease to produce shoots. Cut-off a shoot, and it will at once commence to form another; but lay it in, and fruit is produced and but little growth. Budding and grafting in their different forms to fill-up naked parts I presume are well understood.—JOHN TAYLOR.

### VALUE OF POULTRY DUNG AS A MANURE.

COLONEL WARING, in his "Elements of (American) Agriculture," says:—"Poultry manure is nearly equal in value to Peruvian guano, except that it contains more water. If granted that a hen will consume, of the different kinds of grain, meat, and vegetables, during the year, the equivalent of two bushels of corn, which weigh 120 lbs., then it is certainly low enough to place the excrement—the result of the digestion of these two bushels—as equivalent to 15 lbs. of guano. As the manure from one hundred fowls during a year would amount to 1500 lbs. of guano, taking the above supposition as at least safe, and as

300 lbs. is ordinarily sufficient for an acre of corn, it will be seen that the manure from one hundred fowls will make compost enough for five acres. The experiment has been tried by the writer of applying to one acre of corn the manure of twenty hens one year, mixed with swamp muck, in the proportion of one part hen manure and three parts muck, and the result was a better crop than upon an adjoining acre enriched, for the sake of experiment, with a good fair ordinary dressing of stable manure.

## THE OLDEST EXISTING HORTICULTURAL SOCIETY.

At the centenary meeting of the Nottingham Horticultural Society, held on the 22nd April, 1861, it was unanimously resolved to print the following record of the revival of this ancient Society:—

The first record found of the revival of this Society is in "*Ayscough's Nottingham Courant*," vol. 35, under date April 4th, 1761, in which is contained the following advertisement:—

"To ALL GENTLEMEN AND OTHERS WHO DELIGHT IN FLOWERS. —To revive the Ancient Society of Flowerists their company is desired to dine at Mr. William Taylor's at the Roe Buck, in James's Lane, Nottingham, on Wednesday, the 22nd day of April, 1761. There will be a Show of Flowers for the following prizes:—Five shillings for the best Auricula; the same for the best seedling; and the same for the best Polianthos."

The word *revive* in the above advertisement is printed in italics, clearly proving the Society to have existed before that time. The next advertisement is from the same paper, dated 25th July, 1761.

"All Gentlemen and others who delight in flowers are desired to meet at Mr. William Taylor's, the sign of the Roe Buck, in St. James's Lane, Nottingham, on Wednesday, the 5th of August, 1761, being appointed by the Society for the Carnation Show, and are desired to bring with them what rarities their gardens afford."

This, it is submitted, proves, considering especially the words "being appointed by the Society for the Carnation Show," that the Society was revived according to the previous advertisement, and the Exhibitions have been regularly held from this revival until the present time, and were first held at the Roe Buck, in St. James's Lane, where, by the same paper, they remained until the year 1773, when on Mr. William Taylor's removing from the Roe Buck to the Bull's Head, Middle Pavement, in that year, the Society removed with him, and held their Exhibitions there during that year only. This year (1773) likewise, Mr. William Archer was elected President and Secretary, and so remained for twenty-three years—viz., until the year 1795.

The title of the Society from 1761 to 1784 was "The Ancient Society of Florists;" from 1785 to 1828, "The Ancient and Friendly Society of Florists;" from 1829 to 1845, "The Nottingham Floral and Horticultural Society;" and now, "The Nottingham Horticultural Society," and in union with the Royal Horticultural Society.

## BLenheim HOUSE,

THE SEAT OF THE DUKE OF MARLBOROUGH.

We know of no mansion in England similarly connected with celebrities. Here is believed to have been a Roman villa. In Saxon times Alfred the Great resided here, and here he translated Boëtius. Subsequent Saxon monarchs were here resident, and some of their laws are hence dated. When the Norman dynasty prevailed it still remained a royal palace. By Henry I. it was reconstructed, and the park enclosed by a wall. Here Henry II. lodged Fair Rosamond. Here was born Edward so celebrated as "the Black Prince." Here Queen Mary confined her sister and successor Elizabeth. Chancer lived at Woodstock, looked upon the palace from his garden, and passed to it in his walks down the valley of the Glyme. During all that period and down to the reign of Queen Anne it remained a part of the Crown domains. She recommended it to be alienated and settled in perpetuity upon the Duke of Marlborough and his heirs. This was sanctioned by Parliament, and it was to be thenceforward named after his most celebrated victory. Blenheim comprises the honour of Woodstock. The whole is extra-parochial. It is held of the Crown by grand serjeanty, being of the presentation at the Castle of Windsor on August 2nd, the anniversary of the victory of

Blenheim, of a French standard. The grant was confirmed by Act of Parliament in 1705, and £500,000 voted to complete the residence. It was completed in 1715, but at a cost approaching to double the sum named. The outlay is said to have been £950,000; the kitchen costing £10,000 of that sum.

Sarah, wife of the great Duke, unfortunately had no taste for the antique, so she had the remains of the king's palace pulled down and sold the materials. The remains were near Blenheim, and part of them were the Gatehouse in which Queen Elizabeth, when Princess, had been imprisoned, and a part of the world-famed "Rosamond's Bower." They might have been planted around, so as to be highly ornamental.

Princely as the Palace of Blenheim is, not less so is the domain surrounding it, for the park is nearly three thousand acres in extent, and variously estimated at from twelve to fourteen miles in circumference. Its surface is naturally well suited for the exercise of the landscape gardener's art, especially in the production of grand effects, being marked with bold undulations, and by the deep valley of the Glyme, which now forms the bed of an extensive lake, whilst the extent admits of woods and plantations which would in a smaller space be altogether inadmissible, and of vistas miles in length. The pleasure grounds cover three hundred acres, 160 of which are under the machine and scythe, and the extent of kept ground is probably not equalled at any other place in the three kingdoms.

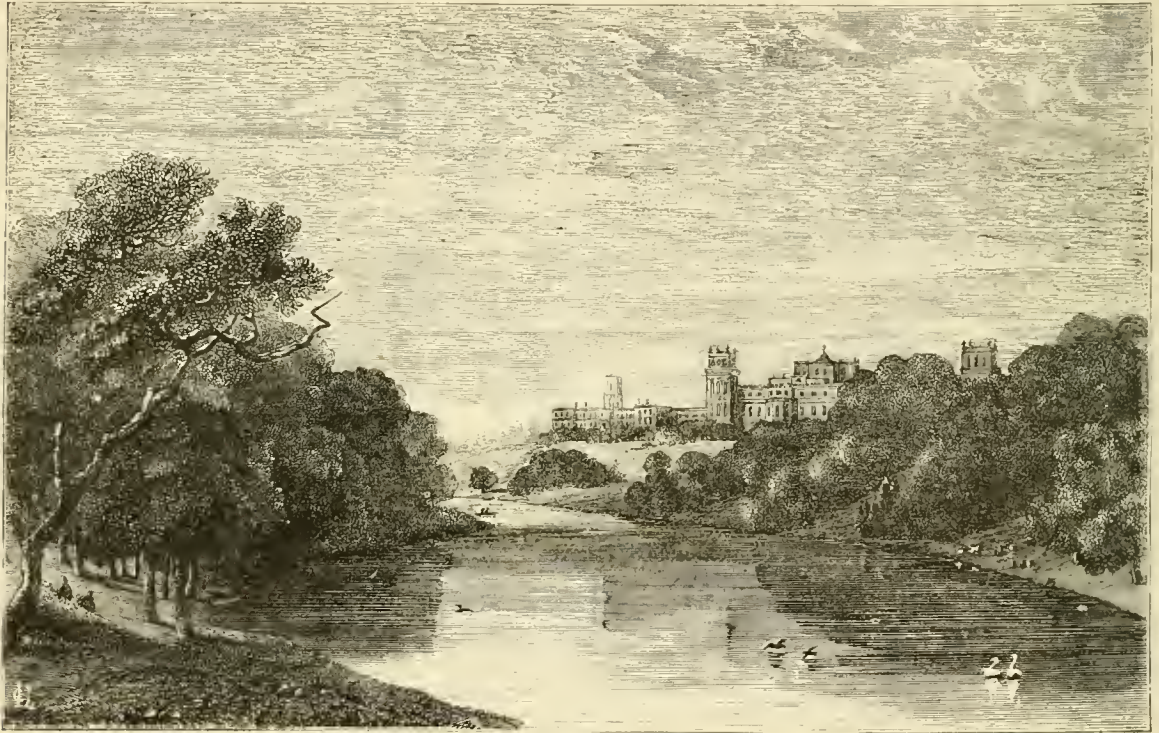
We will start from that part of the grounds which lies to the east of the palace, and endeavour to give an idea of their present state and what is being done by way of improvement. Here there is a space of forty acres or more, in which ancient Ivy-covered Oaks, in many instances much decayed, occur at intervals amongst sweeps of Laurels; and through it runs an avenue terminating with a view of the gate leading to Woodstock, erected by the first Duchess the year after the Duke's death. Other ways strike right and left in every direction among beds of Laurels kept dwarf with the knife, Deodars, Hollies, and Yews. A view is also gained of the outlet of the lake as well as over the park. To secure these objects the Laurels have been cut much lower than they were formerly allowed to grow, and this is certainly an improvement, as it has been the means of opening-up views which were shut out by dense screens of shrubs. Much has been done by the present gardener, Mr. Temple, in this respect, and one of his predecessors, Mr. Turnbull, who was famous for his Grape-growing achievements, had before Mr. Temple's time done good work in the same direction. Near this point are the aviaries, principally stocked with Golden and Silver Pheasants; several fine Cedars are on the left of the main avenue, and a selection of young specimen Conifers have, besides, been planted to give variety. In order to form a continuation, shrubs from all parts of the grounds have recently been brought thither with great labour and planted with an excellent prospect of success. Two old Oaks covered with Ivy here form picturesque objects; and a little further on, where there is a cross avenue, is a Grecian summer-house called the Temple of Health, erected in commemoration of the recovery of George III. after a visit to Blenheim. Passing onwards we gain a view of the south front of the mansion, but our way lies past its east side, where the flower garden is. This has been entirely remodelled, a number of specimen variegated Hollies introduced as stand-points to give relief to the sunk beds, and these reduced in size by increasing the breadth of the surrounding turf. The whole is encompassed by a neat chain pattern in Box. We consider that Mr. Temple has done wisely in reducing the size of the large beds in the centre of this garden, for these, even as they are, must swallow-up thousands of plants which require wintering under glass, and a vast amount of labour not only there but in the ground. The next important object after passing the end of an avenue of Elms averaging 100 feet high, running east and west, is the handsome conservatory which occupies the site of the Titian Gallery, which was consumed by fire some years ago. This structure is 130 feet long, and is glazed with rough plate glass, which is found to answer very well. A new edging, a composition in imitation of stone, has recently been laid down by Messrs. Rosher, and so well is it liked that it is ultimately to be carried throughout the house. At the time of our visit there was an excellent display of Roses, Cinerarias, Azaleas, Camellias, Primulas, bulbs, &c.

We now reach the north front of the Palace, and catch a view, a mile off, of the column erected to commemorate the victories of the first Duke, and which is 130 feet high. Here,

too, we also obtain a distant view of the lake and the Grand Bridge, which forms a notable feature, the principal arch being 101 feet span, and upwards of 50 feet above the water. To the west of this bridge is Rosamond's Well, and to the east is said to have been the site of the ancient palace of Woodstock, of which, however, as already stated, not a trace remains.

It is, however, on the west side that the grounds are seen in their most picturesque aspect. There one looks from high terraces down deep grass-carpeted and tree-clad slopes to the broad lake beneath, and over its smooth surface to wider glades betwixt great clumps of trees, by which the eye is carried on till these woodland scenes are merged in dense plantations in the distance. On this side of the mansion, to return a little inland, is a small flower garden, and here and there summer-houses, from one of which, of rustic work covered with Ivy, is seen the lodge where Rochester lived, known as Rochester's

Castle, beyond the old Oaks and Beeches on the opposite bank. Near another of these summer-houses, called the Temple of Diana, which is of Ionic architecture, the ground is a tableland, of which the slope down to the water is thrown into winding terraces. Some fine standard Magnolias, at least 40 feet high, form a prominent feature near this spot, and when in flower must be exquisitely beautiful. Further on we come to a Rose garden which has suffered much from the attacks of deer, but it is in contemplation to plant the beds in the interior with dwarfs in substitution for the present standards. Onwards we go past numbers of Tulip Trees, Judas Trees, Laburnums, Catalpas, and a variety of other deciduous flowering trees, till we reach the Grand Cascade, which is really a very fine artificial fall, formed by the overflow of the lake skilfully conducted amidst projecting blocks of stone so as to throw the water into a foaming torrent. On one bank is a celebrated Portugal



BLenheim.\*

Laurel upwards of 100 feet in diameter, said to be the largest in the country, but which is in fact an assemblage of plants rather than one only, the branches having, we believe, become naturally layered; still it cannot be considered other than a grand specimen. From the other bank we look down on Cork trees by the side of the water, Oaks, fine Cedars, Cypressess, and an American ground of ten acres filled with Rhododendrons and Kalmias; but the great features all about are the deciduous flowering trees. We omitted to say that the water is crossed by a bridge which leads into a rock garden, which is formed of large masses of stone, and was designed as a fernery. The entrances to this consist of large blocks of stone, which turning readily on a pivot, serve as gateways. It appears to be well adapted to the purpose for which it was designed; and though Ferns are still growing there in the niches prepared for them, the extent of the place would involve an immense amount of labour to keep it in order.

Having now passed through the more important portions of the pleasure grounds, of which, however, any attempt at description would fail to convey a just idea of the beauties, we will proceed to the fruit and kitchen garden, which is enclosed by walls 15 to 18 feet high. In its general shape it is an oblong, with its longest sides running from east to west, but with semi-circular recesses in the middle. The total area within the

walls, is about eight acres, and this is intersected by 12-foot walks, with others of similar width all round. The extent of glass seems at first view disappointing, but this is more owing to the houses being scattered, and the large extent of ground enclosed, than from any deficiency, for there are eight vineries, some of them wide and lofty, three Peach houses, and an orchard house, in all 485 feet run, besides plant houses, pits, &c., of which more hereafter.

In the second early vinery, which was the first entered, the Vines were being gradually renovated by the introduction of young rods, as those in other vineries have been of late years, and there was a fine show of bunches. The third vinery contained, besides Black Hamburgh and Foster's White Seedling, Golden Champion promising well for fruit. The fourth vinery had been started for succession, and the fifth contained late kinds, chiefly West's St. Peter's and Muscats. Next came the earliest Peach house, in which was a very heavy crop stoning and being thinned; and it is worthy of remark that one of the trees had been wholly lifted, and the other half-lifted inside and outside in August before the leaves had fallen, and both show now stiff short-jointed wood. The succession house had been treated in the same way with equally good results.

We now pass to a range of vineries put-up about ten years ago, and which is about 150 feet long, the roof entirely of rough plate glass. In this are the earliest and two latest

\* From a drawing by W. Daniell, R.A., engraved by J. G. Armytage.

vineries; the Vines in the former had been lifted last year after the crop was gathered at midsummer, and an addition was likewise made to the outside border. The crop in this house was a beautiful sight. On the back wall are Figs trained like Pears, and Mr. Temple easily obtains as many branches as he wishes to fill-in with by cutting a notch above each eye, which has the effect of causing the dormant eye to start. Mr. Temple speaks highly of rough plate glass especially for late vineries, although for general purposes he prefers clear glass. Facing east are a viney and Peach house, the former containing Muacata for late use; and it is worthy of remark that Mr. Temple found the Vines rooting freely in nothing but the yellow clay outside, and we may add that the Black Muscat of Alexandria, or Muscat Hamburgh as it is commonly called, thrives well with Mr. Pearson at Chilwell, in a border little better than brick clay. It must not, however, be inferred that because Vines will thrive in such soils an artificial border is not desirable, but we mention the fact to show that in certain cases those who cannot go to the expense of elaborately prepared borders need not be afraid to attempt Grape-growing with comparatively slight preparation where the soil is naturally good.

Besides the vineries, &c., there is a lean-to orchard house, 65 feet by 18, with Peach trees on the back wall. In the body of the house are Peach trees in pots plunged in iron basins and placed on trucks to wheel out and in, on the Rev. John Fountaine's system. A number of trees are also planted out; these are thriving admirably, and are found to involve much less labour in watering, so that ultimately it is probable the whole will be planted out.

Before quitting the kitchen garden, the whole of the walks in which, it should be remarked, have very neatly-kept Box-edgings, we may remark that many of the wall trees require renewing, and Mr. Temple has already replaced a considerable number, especially in the case of the old Apricots, which have been dying-off for years. The renovation of some is being attempted by lifting-out of the clay the roots of one side of the tree one year, and those on the other side the next, re-planting in fresh soil mixed with lime rubbish.

The plant houses are in a walled-in area behind the kitchen gardens, and consist of well-finished span and half-span structures 250 feet long in all. They are heated by one of Weeks' upright tubular boilers, which does its work efficiently, heating besides three vineries and a Mushroom house. The stove contained an abundance of plants for house decoration, as Dracænas, Marantas, Palms, Crotons, Begonias, &c. Ferns and fine-foliaged plants, Cyclamens, Primulas, *Salvia gesneriflora*, and a variety of other flowering subjects enlivened the other houses. In a Cucumber house, which had just been planted, were Gardenias, *Eucharis amazonica*, and a variety of other plants being pushed on.

A number of useful brick pits, about 350 in all, are used for growing Pines, Strawberries, and for vegetable-forcing. The Pine Apples chiefly grown are Queen and Smooth-leaved Cayenne, of which Mr. Temple is working-up a good stock, and nothing could be more satisfactory than the appearance of the plants, both fruiting and succession. In the Mushroom house were splendid crops of large fleshy Mushrooms, and fresh beds were coming-on, which promised to be equally productive.

The foregoing is but an imperfect sketch of what is to be seen at Blenheim; but to appreciate the beauties of the grounds they must be seen. We have purposely abstained from all attempt at a description of the magnificent edifice which they surround as being foreign to gardening, as well as from allusions to the achievements of the great captain of his age, which are matters of history. The noble possessors of Blenheim have long been noted for their active interest in gardening, and it is gratifying to find that the present Duke and Duchess inherit the same taste. We may feel certain, then, that it will not be their fault nor that of Mr. Temple, whose antecedents are so favourably known, if it do not take a yet higher position as a home of gardening than it has hitherto held.

## FLOWERS FOR OUR BORDERS.—No. 29.

ALSTRÖMERIA CHILENSIS.—CHILIAN ALSTRÖMERIA.

THE *A. chilensis* may be said to belong to the hardest section of the genus; the early shoots are sometimes cut by spring frosts, but the roots appear capable of resisting almost any amount of cold. It is somewhat doubtful whether this plant has a claim to be considered a distinct species. We believe

it was originally raised by M. Van Houtte from seeds imported from Chili; but the species appear to hybridise so freely that this circumstance is not altogether conclusive of its distinct character. The flowers vary considerably in their tint, some of the specimens producing blossoms much darker than others.

*Alströmeria chilensis* is of the easiest cultivation, requiring only to be planted in moderately rich soil of a sandy texture, where it will flourish for years with but little attention. It grows about 2 feet high, and the roots will, when two or three years old, produce several stems, each terminated by an umbel of from ten to twenty blossoms, which expand in July and August.

The plant will not succeed in stiff loam, and, therefore, when the soil of the border is of this character, an artificial compost must be prepared of sandy loam, rotten manure, and leaf mould or peat. It will be advisable to plant the roots at a depth of at least 4 or 6 inches; they will then be not only less liable to injury from severe frost, but will also suffer less from drought in summer. In dry weather, during their growth, they will require a frequent supply of water, and when in flower the stems, being somewhat feeble, must be supported by neat sticks. In shallow hot soils neither this nor any of the species succeed well.



*Alströmeria chilensis.*

After flowering, if seeds are desired, the plant must still be freely watered, or the seed vessels will wither; and this remark applies equally to many other plants, which it is but too common to neglect when they will no longer repay us for our attention by their beauty. With the precaution just noted the plant will ripen abundance of seed, by which it may be easily increased. If sown as soon as ripe the seeds vegetate readily, especially when aided by a little bottom heat; but unless the young plants can be kept in a growing state through the winter by preserving them in a greenhouse, it will be advisable to defer sowing until spring, as the young tubers would, in all probability, shrivel and perish if allowed to become dry, and, from their immature condition, they would scarcely survive an exposure to the vicissitudes of our winter. In any case, a light sandy soil with a small admixture of vegetable matter is to be preferred for raising the plants, and, as the seeds are rather large, they may be covered with half an inch of earth. When sown in spring, and forwarded on a hotbed, a few of the seedlings will, perhaps, flower the same season; but, in general, the tubers will not produce blossoms until the second year. In favourable localities and suitable soils the seed may be sown in the open ground, and will then produce stronger plants than if sown in pots.

The plant may also be propagated by dividing the tubers, which increase freely; but we do not recommend that this be done too frequently, as a large clump of the plant is far more effective than single specimens.

It may, if desired, be cultivated in large pots, but will then

require dividing every season, or the long, white, fleshy roots will so coil round and fill up the bottom of the pot that it will be impossible to remove them without injury. The better to accomplish this, a disc of tile or slate should be put at the bottom of the pot before placing in it the ordinary fragments employed to ensure drainage; and when it is desired to turn out the tubers, this may then be easily effected by pushing up the tile by applying the finger to the orifice at the under surface of the pot.

*Alströmia aursa* is another species which may be recommended to those in quest of perennials of easy culture. It is of taller habit than the preceding species, and retains its foliage longer. It is, however, of such free growth that when once thoroughly established it is apt to encroach unduly upon its neighbours, and, like the camel in the fable, dispossess them altogether, unless kept within bounds. The singular resupinate foliage of this, as well as other species of the genus, can hardly fail to arrest the attention of the least observant cultivator; and it is also worthy of remark that in *A. chilensis*, and probably in other species, the stamens, being longer than the style, are at a certain stage of their growth curved upwards and inwards in succession, so as to bring the pollen into close contiguity with the three-cleft stigma.—(*W. Thompson's English Flower Garden, Revised by the Author.*)

### A CHEAP AND DURABLE GREEN PAINT.

THE season for painting being at hand, and the time of "doing-up" small gardens being very commonly taken advantage of to do a little painting in the shape of renovating with a fresh coat the rails, gates, doors, garden sticks, &c., it may be acceptable to your readers to be put in possession of a formula for a paint which shall not only be less costly but infinitely more slightly and serviceable than the vile abomination which ordinarily does duty under these circumstances. The stuff usually supplied when green paint is inquired for is almost invariably that which is known as "Brunswick green," a colour that has no "body" in itself, but requires a good coating of lead colour as a foundation, and even then it changes tint so rapidly that this is noticeable when using it, while after a few months' exposure it becomes a leaden grey, and seldom lasts more than a season. It is a splendid colour to look at in the can, which makes it very tempting, but, unfortunately, this is about the best thing that can be said in its favour.

A very cheap and durable material may be obtained in the following manner:—Procure an old 4 or 6-lb. Australian meat tin, have it thoroughly cleaned with boiling water, and then, when dry, take it to the colourman's, and have half a pound of black paint weighed into it, and also half a pound of ground yellow ochre (Oxford ochre if you can get it), for both of which I pay 4d. a-pound. Let these be well stirred together, and an olive green will be produced varying in colour according to the quality of the yellow ochre; but a little more either of the black or of the yellow may be added to produce either a deep ivy green or a lighter shade up to the palest *Acacia* leaf. When satisfied with the colour, ask for a pennyworth of "patent dryer," and mix this thoroughly in, and the compound will then be ready to dilute for use; but it may be preserved for a considerable time by being kept in a cool shady place, and with 2 or 3 inches of water over it.

When required for using, take a small portion out into a pipkin, and thin with equal parts of raw linseed oil and turpentine; a half-pint bottle filled in these proportions will be ample to provide at first. On no account use *boiled* oil, as this only dries on the surface while it remains soft within, and is very liable to blister when exposed to the sun. One coat of this will be found to cover very fairly, but it is always best to lay-on the first coat very thinly, and let it become thoroughly dry and hard before completing with a second coat. When leaving off, let the brush be rubbed dry, and not left in the paint, but immersed in a vessel of water; and on no account put water over the paint that has once been mixed for use, as the latter plan renders it far less durable. I once had a board fence that had been painted thus, and after seven years' wear it was in good condition when removed. It is a colour that harmonises well with foliage, and is in no way obtrusive to the eye.—W. KENEDY BRIDGMAN.

SALE OF ORCHIDS.—Mr. Stevens sold 340 lots on the 25th of March, which realised about £700. *Cypripedium Parishii* sold

for £5 5s.; *Dendrobium thyrsiflorum* from £2 10s. to £9 10s.; *Vanda carulescens* from £2 to £7 7s.

### THE HISTORY OF THE ROSE.—No. 2.

It is singular that Pliny has not mentioned the twice-blowing Roses of *Pæstum*, so often referred to by Roman poets. Is the *Prænestina* or the *Campanian* Rose to be regarded as the *Pæstan* Rose, or a species of it? If so, is it not probable that Pliny would have noticed them more particularly? Of the *Pæstan* Rose we unfortunately possess no detailed accounts. They appear to have been extremely beautiful and fragrant, and to have grown very abundantly at the place from which they took their name. Virgil, Martial, Ovid, and Propertius constantly allude to the *Pæstan* Roses, speaking at one time of their abundance, at another of their fragrance and colour.

But there is a Rose which still blooms amid the ruins of *Pæstum*, and it is thus noticed by Mr. Swinburne in his "Travels in the Two Sicilies":—"The *Pæstan* Rose, from its peculiar fragrance, and the singularity of its blowing twice a-year, is often mentioned with predilection by the classic poets. The Wild Rose, which now shoots up among the ruins, is of the small single Damask kind, with a very high perfume. As a farmer assured me on the spot, it flowers both in spring and autumn." The *Pæstan* Rose, according to most authorities, appears to have been of a deep red colour; yet Pomponius Fortunatus, in his notes upon *Columella*, says it was almost white; he further observes that it flowered in May and September.

Of the ancient rosaria, or places set apart for the cultivation of Rose trees, no account has reached us as to the manner in which they were laid out. Pliny and *Columella* mention March and April to be the months during which the rosaris should be dug-up, and otherwise prepared for the reception of plants; but *Palladius* recommends an earlier commencement. He says, "We are to plant beds of Roses this month (February), which are to be set in very narrow furrows or in trenches, either suckers or seeds. The seeds of Roses are contained in integuments, which they produce, which become ripe after the vintage; and their maturity may be known by their dark brown colour, and from their softness. If there are also any old beds of Roses, they are stirred at this season with weeding instruments or pickaxes, and all the dry wood is cut off. Now, also, those places that are not well supplied, are to be recruited by means of layers. If you wish to have Roses more early than usual, you are to dig round them at the distance of two palms, and to water them twice a-day with warm water. . . . Although beds of Roses are to be planted in February, we may, however, make plantations of Roses in November; which, if being in want of plants you wish to be well supplied with, you ought to cut the young shoots with their joints, and to set them in the same manner as a Vine is propagated, and to cherish them with compost and watering. When they are a year old you are to transplant them a foot distant from each other, and thus to fill the ground which you destined to this sort of plantation." Neither *Columella* nor *Palladius* mentions by their names the kinds of Roses which were cultivated in these plantations. This omission may, perhaps, be attributed to the kinds of Roses used for wreaths, chaplets, &c., being generally known, since we learn that none but these so employed were planted in the rosaria. The most celebrated of these Rose plantations were at *Pæstum*. It may here be mentioned that the custom of rearing large plantations of Rose trees still exists in the East and in Russia, as appears from the following extract from Van Halen's account of his journey in that country:—"On the following morning we left our place of bivouac, in the vicinity of Kuba, with the rising sun, and proceeded through picturesque fields covered with Rose trees. The exquisite fragrance emitted by them, and which the morning dew rendered more fresh and grateful; the varied warbling of a multitude of birds, who had their nests in these delightful bowers; and the sight of several cascades, whose playful waters leaped from their steep summits, produced on every sense an indescribable feeling of delight. One of the nobles belonging to the suite of Ashan Khan made me a present of a small flagon of oil extracted from these Roses, and which, when some months after I compared with the best otto of Roses of Turkey, surpassed it in fragrance and delicacy. Beyond these woods of Roses spreads an extensive forest."

Roses, according to Theophrastus and Pliny, were raised, in some cases, from seeds; but they say that the growth of the plant when so propagated was slow, owing to the seed being

situated within the bark under the flower, and having a woolly covering. Shoots or cuttings were also planted, and this mode of propagating the plant was preferred to the above, because their growth was more rapid.

The cuttings, according to Pliny, were four fingers or more in length, and were planted soon after the setting of the Pleiades, perhaps about April, and were afterwards transplanted during the following spring. The young plants were placed 1 foot distant one from another, and were frequently dug round. They required a light soil, not rich nor clayey, nor one in which there were springs. Their favourite soil was ground covered with the rubbish of old buildings.

The following account of the cultivation of Rose trees is given by Didymus in the "Geoponics."

If you wish, says the above writer, to have a constant succession of Roses, plant and manure them every month. But Roses are planted in various ways. Some transplant them with the root entire; others take them up with the root, and cut them down to the size of four fingers in length, and plant all that is cut off the roots, and what grows from them, at the distance of  $1\frac{1}{2}$  foot from each other. Some weave wreaths of Rose plants, and plant them for the sake of their fragrance. But we ought to recollect that Roses will have more fragrance when they are grown in dry places, in the same manner as Lilies have. Roses come early both in baskets and in pots, and require the same attention as Gourds and Cucumbers. If you wish those Rose trees already planted to bear flowers early, dig a trench two palms in breadth from the plant, and pour into it warm water twice a day. Democritus says that if a Rose is (thus?) watered twice every day, in the middle of summer, it will bear flowers in the month of January. Florentinus says a Rose may be grafted, or in-eyed, into the bark of an Apple tree, and that Roses will appear at the same time the Apples do. If from a few plants you wish to make more, take cuttings of them, and, making them four fingers or a little more in length, set them into the ground. When they are a year old transplant them at a distance of a foot from one another, and tend them by careful digging, and removing all the rubbish from about them.

It was customary among the ancients to cut back and burn down Rose trees, by which means the trees were increased in size, and produced a larger number of flowers. Theophrastus says that the flower by these means was rendered more beautiful.

The Rose, like the Vine, appears to have grown most rapidly when transplanted; and Theophrastus informs us that, when this was done frequently, a more beautiful flower was produced. The Rose-tree cuttings required to be put into the ground deeper than young fruit trees, and not so deep as Vines; the latter being sunk in the earth to the depth of 2 feet. Didymus observes that the fragrance of the Rose is increased and improved by being grown in the vicinity of Garlic.\*

The rarity of early Roses made them valuable, and like all vegetable productions obtained out of their season, they were eagerly sought after, and bore a high price.

"Rara juvant: primis sic major gratia pomis,  
Hibernæ pretium sic meruere Rosæ."  
Martial, lib. 4, epig. 29.

"The rare delights: we find first Apples nice,  
And winter Rosæ bear a tenfold price."  
Elphinston's trans.

The employment of warm water for forcing Roses has already been mentioned. Palladius and Seneca both allude to this custom, and Pliny states that the time when it should be put into practice is when the calyx of the Rose begins to sprout. Columella and Pliny state that it was usual to cover plants with the "lapis specularis" (talc), when it was an object to make them produce their fruits early; and this plan appears from Martial to have been pursued with respect to flowers also:—

"Conditæ sic puro numerantur liliæ vitro,  
Sic prohibet teneras gemmæ latere rosas."  
Lib. 4, epig. 22.

"So through the crystal are the Lilies told:  
So does the gem the blushing Rose unfold."  
Elphinston's trans.

Before quitting this portion of the subject, we must allude to a singular practice mentioned by Didymus in the passage

"The Pæstan Rose unfolds  
Her bud more lovely near the fetid Leek."  
Philips, Cider, v. 254.

† By "gemma" is to be understood the talc with which the Roses were covered in gardens.

from the "Geoponics" above quoted—namely, the weaving of wreaths, and planting them; because Casaubon, in his "Comments upon Athenæus," where a passage is quoted from Nicander's "Georgics," in which it is mentioned that frequently a complete crown made of Ivy is planted, says, "*Ridiculum est, . . . interdum coronam ipsam hederaceam cum suis racemis esse plantandam.*" It is probable that Casaubon had not met with the passage in the "Geoponics" which proves the possibility of forming wreaths thus; and, moreover, shows that it was by no means an uncommon practice to "plant crowns."

## A FEW WORDS ABOUT DRAINAGE AND WATERING AS APPLIED TO PLANTS IN POTS.

In the article of last month's "Gardener" [see page 259] the most important points in connection with the cultivation of plants in pots are touched upon, and their discussion invited. In compliance with the invitation I beg to make a few remarks in reference to drainage and watering. Without moisture at their roots plants cannot live and thrive for any great length of time, neither can they do so if the moisture in the soil is in excess of their requirements: hence we drain our gardens and fields where the nature or condition of the soil demands it; and in the matter of flower pots special provision is made in them for the escape of superabundant moisture, provided we only supply suitable drainage materials in sufficient quantity at the time the plants are being transferred to them. The effect of neglecting to do so, as shown in the article referred to, should impress on the mind of all who are desirous of becoming successful cultivators of plants in pots the importance and absolute necessity of performing this operation in a thoroughly efficient manner.

I have been long impressed with the fact that efficient drainage and judicious watering are the two most important operations connected with the culture of plants in pots. If the drainage is ample, and care is taken to prevent the soil from mixing with it at the time the plants are being transferred to the pots, two very important conditions towards the future welfare of the plants are thereby secured. The best two materials with which I am acquainted for preventing the soil from becoming mixed with and choking-up the drainage in flower pots are cocoa-nut fibre and hair, the same as that used by plasterers. A slight layer of either of these placed over the drainage will prevent for a long time the soil getting mixed therewith. Moss and the fibry portions of the compost are also good for this purpose, and are the materials oftenest used; but the others are preferable where they are to be had. When the drainage is efficient to begin with, it is one point in favour of the plants not getting injured or made to suffer through careless watering afterwards. But the knowledge that the drainage is good should in no wise lessen the responsibility of those whose duty it is to supply the plants with water; and all the skill and knowledge of which they are possessed in reference to this particular operation should be brought into action on each occasion that it is performed.

Perhaps there is not a more difficult subject connected with gardening to write about than that of watering plants in pots. It is admitted by all who understand the matter, that no definite rule can be laid down as to how often it may be necessary to do so. The circumstances and conditions are so varied under which plants in pots are grown, that it is impossible to lay down a rule in reference to watering that would with any degree of certainty apply to all of them. One thing, however, we may state with safety, that water should be given as soon as it is required, but not before. The difficulty, however, is to know the precise state of dryness, consistent with the welfare of the plants, at which the soil should be allowed to arrive before water is given. This can only be learned through practical experience, and a knowledge of the amount of moisture necessary in the soil to maintain healthy and vigorous growth in the particular plants being operated on.

I am inclined to think that in a general way more harm is done, especially to plants growing in large pots, through overwatering than what takes place through a deficiency thereof. If through overwatering or imperfect drainage the soil in a large pot becomes sodden and sour, it is ten to one if ever it becomes sweet again while it remains in the same pot. No doubt by withholding water it will be got into a dry state, but it will always have a greater tendency to become sour afterwards than if it had not been overwatered previously. This should make us careful to guard against overwatering plants

that have to remain in the same pots for any lengthened period of time, as the roots will never take so kindly to soil that has once been sour, although by care and attention to watering we may get it into what appears a fair condition of sweetness.

Then the system of giving dribblets of water at a time is also a bad practice. By this mode of watering the surface and a short distance beneath it is kept in a seemingly right-enough condition as regards moisture, whilst further down in the pot the soil is so dry that the roots cannot derive any benefit from it. In the case of those plants requiring peat soil to grow in, this system of watering has been the cause of the death of many that were valuable; it, therefore, cannot be too carefully guarded against. If peat get into a certain stage of dryness it is very difficult to get it moist again. I have observed, and others will have done likewise, that on turning out of a pot a plant that has been potted in peat, the outside of the ball appears all right as regards the state of dampness it is in, but on breaking into it a considerable portion towards the centre is found as dry as dust. Indeed, I have on more than one occasion wondered how it was possible for it to have remained so, seeing that in some cases which have come under my notice the outside of the ball was in an over-wet condition. This fact points to the necessity of giving at each successive watering a quantity sufficient to moisten the whole mass of soil contained in the pots.

It is difficult to get some young men to understand how much of a plant's well-being depends upon the care taken in the matter of watering. I have met with some who, on starting to water a varied collection of plants, had no scruple about treating all alike, each pot in its turn getting filled with water, without taking the trouble to ascertain whether the state of the soil demanded it or not. This may be considered by some an extreme case of careless watering, but I fear it is not of rare occurrence. Then there is another class who have a peculiar liking for the dribble system—firm believers in little doses often repeated. Of the two modes of watering, this last one is the worse. If the drainage is good, and the soil has been firmly packed in the pots in the first instance, the former mode is not so much to be feared; but both systems are bad, and no one who practises either of them will ever become a first-class plant-grower. I am inclined to think that many young gardeners do not give the amount of attention to this subject which its importance entitles it to. There are few amongst them who have been for any length of time at the profession who could not tell all about the proper ingredients necessary for forming a compost in which to grow a choice *Pelargonium* or rare *Orchid*, and yet in this every-day matter of watering there are not so many of them who can perform it with judgment, and to the greatest advantage of the subjects to which it is being applied. There is one thing should be kept in mind on each occasion that plants are watered—that is, the temperature of the water, which should not be below that of the atmosphere of the house in which the plants are located. In the case of stove plants, if the water is a few degrees higher it will be beneficial to them. In conclusion, I would impress on young men the necessity of carefully examining the soil in the pots before applying water; and if the state of the soil indicates that it is required, then give sufficient to moisten every particle of soil in the pot, but in no case should water be given until we are pretty certain that its application will be beneficial to the plants.—J. HAMMOND (in *The Gardener*).

## NOTES ON VILLA AND SUBURBAN GARDENING.

A SHORT time back, when speaking of the advantages of striking cuttings of plants for bedding-out in the summer, I recommended them to be potted early, in order that the plants might form a compact ball of roots, and be ready to plunge into sand at this season in temporary pits, so as to set the frames and pots at liberty for most useful purposes. As the season has now arrived when plants will only require protection from frost and heavy rains, I should recommend a pit to be formed, and the plants to be turned out without delay. In forming a pit it is only necessary to excavate the ground in a sheltered part of the garden to the depth of 1 foot, placing the earth so as to form an embankment round the sides of the pit; on this may be placed some rough poles to form rafters to support straw frames, mats, or any other covering that may be used to protect the plants. This is a rude contrivance that can be used in every place, but where flower gardening is extensively practised it would be well to have something of a more permanent character, such as brick or turf walls, with wooden shutters to protect the plants. A turf wall 9 inches thick, if formed in summer when the turf is dry, will resist much more frost than a brick one of the same

dimensions, and consequently I should recommend a pit of the kind in every reserve garden, as it will be found exceedingly useful at all seasons—in winter to protect autumn-sown annuals, and in summer for innumerable purposes, as there is no doubt but that plants of all kinds in pots would be materially benefited if placed in pits of this description, where the pots would be protected from currents of cold dry air, which is so injurious by abstracting moisture from the pots and at the same time communicating a chill to the roots.

After the pit is formed the bottom must be made pretty firm, and if convenient covered over with thin turf, on which must be placed about 3 inches of fine sand. In this the plants may be placed, taking care to allow them sufficient room to form themselves without being crowded. The advantages of this system are the great saving of labour and expense in pots, the greater mass of roots formed by the plants than could be the case if they were exposed to the alternations of drought and moisture in pots; and, what is of still greater importance as a matter of taste, they get rid of that foxy appearance which generally disfigures them so long when turned out in the ordinary manner.

The potting of greenhouse plants must be proceeded with as the plants require it. No general rule can be given for this operation; the state of the plant will be the best guide to its proper management.

After this, insects will make their appearance in most greenhouses. The best remedy for red spider and thrips is to dip the plant in a thin solution of glue; but for the green fly, the old system of fumigating with tobacco is the best resource.

An easy and less unpleasant method of fumigating is to place a garden sieve on three pots 6 inches high on a path near the entrance to the house; on the sieve place a few red cinders, and cover them when not too brisk with damp tobacco and wet straw fresh from the stable. In this manner a house may be filled with smoke by half the tobacco usually employed, and with a mere tithe of the trouble usually attending the operation.

For sowing down grass seeds the ground should now be lightly dug over, and the seeds sown immediately afterwards. It will be advisable to scatter them rather thickly, then tread and well rake them in, and give the ground a thorough rolling. Care must be taken to make up the ground by the edgings already laid, to the level of the top of those edgings, in order that when the young grass springs up all may be on the same level, and there may not be a break or dip between the old and the new. After the grass has vegetated it will simply require to be kept free from weeds until it is strong enough to be mown. A dry day in showery weather now will be the best time for sowing grass seeds; and it ought not to be forgotten that on the evenness with which the ground is dug, levelled, and raked, will depend the beauty and smoothness of the lawn.

Some of the fittest seeds for a lawn are *Poa pratensis* and *trivialis*, *Festuca ovina*, *Cynosurus cristatus*, *Avena flavescens*, *Trifolium minus*, and White Dutch Clover. Some nurserymen have mixtures of their own adapted to particular soils. But the smaller the proportion of the stronger-growing kinds that is admitted the finer, and smoother, and softer will be the grass, and the less mowing it will require.

Where good turf can be had without much trouble or expense it will be more immediately beautiful and satisfying than sowing down a lawn with fresh seeds; and even if turfing be too serious an item, under any circumstances the edgings of walks and the outlines of beds should be everywhere defined by a strip of old turf at least a foot in width. This will prevent the seeds from being scattered on the walk or borders, and make the edging firmer and less ragged for several years.

Let all Potato-planting be finished by the middle of this month at the latest, at least the late kinds intended for seed for the next year. The very early kinds, as Ash-leaved Kidneys, &c., should not be set too early for seed, or the probability is that they will lose their first sprouts. The end of the month a good time for this purpose. Let all Potatoes for seed be planted on high airy and unshaded ground. Break away all Rhubarb stalks running to seed. Cover Sea-kale springing with a mound of soil.

Give fresh earth to any plants in pots, such as Carnations, Pinks, Auriculas, Double Sweet William, Rocket, &c.

Transplant any hardy Roses which you may wish to bloom late in the year. Plant Box for edgings still, and roll the lawn.

Keep the garden quite free from weeds and dead leaves. Now place sticks to every plant or stalk requiring support. Fix the sticks on light iron rods firmly in the ground, and tie the stems to each stick neatly in two or three places.

Some evergreens may yet be removed, as Laurels, *Laurustinus*, Portugal Laurels, *Cistuses*, *Arbutus*, *Magnolias*, *Pyracanthas*, &c.

Place your Auriculas, Hyacinths, &c., which may be in pots in a sheltered place during heavy rains or winds, and shelter those flowers which are in the borders as well as you can. Trim them from dead leaves.

Protect the blossoms of fruit trees, and eradicate insects by all possible means. See that all the winter and early-spring work amongst fruit trees is brought to a close forthwith. Finish

root-pruning with all luxuriant trees. Most persons may have observed the effect of moving a large Pear tree very late in the spring—it generally becomes covered with blossom buds; such in degree will be the effect of root-pruning at this period.

Now is a good time to use sulphur mixed with soft soap and clay as a paint, daubing it with a brush between the Peach, Nectarine, and Pear shoots, to prevent the breeding of the red spider.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

PLUM trees on the walls are now in full flower, and pyramids are also taking on their snowy covering. Notwithstanding our heavy crops of all sorts of fruit last year, the trees are now all thickly set with blossom buds, which will no doubt result in an abundant crop if the weather be favourable at the time the trees are in blossom. The nights have been frosty, but the ground and air are remarkably dry for the season.

Sowed *Savoy* and *Brussels Sprouts* in poor soil. On clayey soils we used to find the dwarf sorts of *Savoy* answer best; a variety which has been in cultivation for many years—Early Dwarf Elm, is excellent. On our light sandy soil the Drumhead is not too large for us. Scrymger's Giant Brussels Sprouts can be highly recommended; the sprouts are large and firm, and the plant moderately dwarf. We have kept the hoe at work amongst all growing crops, fruit-tree borders, &c.

Pricked-out *Celery* that was sown early in a hothed. *Celery* sown early in heat has a tendency to bolt into flower; but this may, to some extent, be prevented by taking care that the plants receive no check to their growth from the time they come through the ground until they are ready to be dug up. The first and most evident check they are likely to receive would be at the time of removing from the hothed to a cold frame the box in which the plants have germinated; this should be done when the weather is mild, and the frame must be kept pretty close for a few days. After being pricked-out the plants should also be carefully watered with a fine-rosed watering pot, and be placed in a close frame.

### FRUIT AND FORCING HOUSES.

*Vineries*.—The Grapes have been thinned in all our early houses, and the berries are swelling rapidly so that the laterals do not grow out much; whenever they do so they are pinched closely back, as the houses are well furnished with leaves. It has been recommended to allow the laterals to grow without any pinching, as it is said the more leaves and branches there are the greater will be the root-action. This may be all very well in theory, but practically, as regards the training and ultimate health of the Vines, it will not answer. If the leaves are not freely exposed to the sun they will be flimsy in texture, and the buds at their base will not be perfectly developed nor thoroughly ripened. In the case of Muscat Grapes, the berries must also be exposed to the light before they will take on the desirable golden colour. The Black Hamburgh colours better if the berries are shaded from the sun by the leaves; a knowledge of this fact is useful when stopping and training the young growths. Drying east winds are now prevalent, and at such times the ventilation must be watched. When there is little or no sun the smallest chink of air will be sufficient, but when the sun is acting powerfully upon the glass it is necessary to open the ventilators more, but when the wind is cold great caution is necessary; the house at such a time must be damped frequently during the day. The inside borders of late houses should receive a thorough watering, the houses to be shut-up early in the afternoon.

*Peach House*.—In the early houses the fruit will be going through the process of stoning, and it will not swell perceptibly for a period of six weeks. This is generally considered a critical period, as some of the fruit may drop off; gardeners generally provide for this by not thinning too closely at the first, reserving some until the fruit begins to take the second swelling; but if the trees are in good health, and the treatment they receive is of the right kind, there will be no danger of the fruit dropping at this time, presuming, of course, that it has been thinned sufficiently at a previous time. The growing shoots must be trained down to the wires, and those having a tendency to grossness cut out. It is best to train the young wood up from the base of last year's wood; this shoot and the leader will be quite sufficient for the present. Syringe the trees thoroughly night and morning; the trees at this time ought not to be hurried with a high night temperature, 60° will be sufficiently high, and as soon as it is perceived that the fruit has taken the second swelling, 65° or even 70° will do no harm, with a rise of 10° or 15° by day from sun heat, shutting-up the house between three and four o'clock in the afternoon.

If late houses have not received any assistance from fire heat the trees will now be in flower. Attend to the instructions given two weeks ago, also see that the inside borders are well watered. This ought to have been seen to before the blossoms expanded, as, should the roots be in a very dry medium, a good

soaking of water would cause the flowers to drop off. A Peach-house border should not at any time be allowed to become dusty.

*Dwarf Kidney Beans and Strawberries*.—Our available space for these is very limited, but we now get very good dishes of both from spare shelves and stages in the Pine houses. For small space there is no better Dwarf Kidney Bean than Newington Wonder, and instead of bringing on succession plants we manage to gather a tolerably regular succession of pods from the same plants. The Beans are gathered about once in two days, and kept in a healthy growing state by frequent syringing and watering with manure water. Earlier in the season the difficulty with Strawberry plants was to obtain room for them in a house with a night temperature of from 45° to 50° to begin with, as they would not stand being removed from a cool-orchard house to a night temperature of 65° all at once. We have sometimes been able to put up a hothed for them, which answers very well, as root-action is promoted by the bottom heat. Now we remove the pots to the higher temperature at once, as the flower trusses, though not yet visible, are sufficiently developed not to suffer any harm from being forced into more active growth.

### PLANT STOVE.

*Achimenes* and *Gloxinias* have been put a little in the shade during the last few years. On one or two occasions they had been invited at some of the London exhibitions, but the miserable examples exhibited did not justify the Societies in continuing them in the schedules. The plants are not easily moved about; the flowers and leaves of both are fragile in the extreme, requiring great care to transport them any distance. For decorative purposes in the plant stove at home they are very useful; they are, besides, easily obtained and easily grown. The best *Achimenes* we ever saw were grown with a little bottom heat, and the best *Gloxinias* without. When growing, a moist warm atmosphere is desirable for them, but watering or syringing overhead they do not like at all. The potting material is composed of turfy loam two parts, one part of turfy peat, with a sixth part of rotted stable manure, a little silver sand being added to it if requisite. The plants should be placed near the glass, and must be shaded from bright sunshine.

Potted stove *Palms* and *Ferns*. *Palms* require to be potted once a-year, and now is as good a time as any to do it, bearing in mind that there is much more danger of over than under-potting them. Thus, a plant in a 5-inch pot should not be potted into one more than 7 inches in diameter, and other sizes in about the same proportion. Should any of the specimens be unhealthy it will probably be owing to defective root-action. Such plants are turned out of their pots, the balls reduced, and the plants repotted in clean pots well drained, and of the same size that they were growing in before. The main ingredient in the compost for successful Palm culture is turfy loam full of fibre and torn to pieces by the hand. Very light sandy loam is not so well adapted for the purpose as loam of a moderately clayey nature. A little turfy peat and leaf mould added to it are all that are required.

*Amaryllids* have finished flowering and are now making their growth. They require plenty of water and a position fully exposed to the sun.

### FLOWER GARDEN.

We have put up our turf pit, and a large number of zonal *Pelargoniums*, *Lobelias*, and other moderately hardy subjects have been placed out in it. *Calceolarias* have been planted out in a trench where a mat can be thrown over them if the frost is very severe. We have not been able to get all the bedding plants out of the vineries as yet, but will do so as soon as possible. Placed *Carnations* and *Picotees* in their flowering pots. The young leaves of some of the plants were observed to be eaten, and a search at night soon discovered the marauder at work in the shape of the leather-coat grub. He seems to bury himself in the soil by day and commit his depredations at night. The earliest *Auriculas* are now coming into flower and require increased attention; as the pips expand the plants are removed to a frame with its highest part to the south. Green fly has also increased with more genial weather, and has been removed with a camel-hair brush: this is better than smoking the plants.—J. DOUGLAS.

## TRADE CATALOGUE RECEIVED.

T. S. Ware, Hale Farm Nurseries, Tottenham, London.—*Selection of New, Rare, and Choice Perennials.*

## TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

Books (*Miss F. K.*).—Our "Kitchen Gardening for the Many" may suit you. You can have it free by post if you enclose five postage stamps with your address. (*A. E.*).—Our "Greenhouses" will suit you. It may be had by post from our office for 10d. (*D. W.*).—Sutherland's "Hardy Herbaceous and Alpine Flowers" may suit you.

BRAZILIAN ORCHID (*Z. K.*).—Your Orchid from Brazil appears to be *Epidendrum paniculatum*. It is fully developed, and certainly is not worth an amateur's attention when there are so many showy kinds which require no more room nor attention.

GARDEN OVERFLOWED BY SEA (*Maritima*).—Instead of injuring your fruit and vegetable garden the salt water will probably benefit the crops. We knew a garden at Ipswich where the Asparagus beds were greatly improved by being overflowed by the sea.

WALL-TREE BLOSSOMS FROSTED (*F. T.*).—We cannot aid you. If you had adopted our advice promptly the mischief would not have happened.

"If you wait on the sun rising  
Till the evening's turning grey,  
Do not think that it's surprising  
When you find you've lost a day."

#### BOX FOR EXHIBITING ROSES (*H. T. P.*)—

	Length.	Breadth.	Height.
For 24 Roses ..	4 ft.	1 ft. 6 ins.	6 ins. back, 4 ins. front.
" 18 " ..	3 ft.	ditto	ditto
" 12 " ..	2 ft. 2 ins.	ditto	ditto
" 6 " ..	1 ft. 6 ins.	ditto	ditto

Moss is still the best material to use for setting the Roses on. The tubes should be made of zinc about 4 to 4½ inches long; 2 inches wide at the top, and tapering to 1 inch wide in the middle, having a moveable top through which the Rose is placed previous to its being put into the tube. An indian-rubber top pierced for the stem is an improvement.

PLANTING POTATOES.—"Lancaster Amateur" asks of "H. E. W. Guildford," who sets all Potatoes by the 28th February, how he protects them from the weather, or whether he sets them deeply, so as not to appear before the severe weather is over; and does he take them on ripe or as to the 18th of August?

SAWDUST AND STRAW MANURE (*W. P. H.*).—Your query is very indefinite. Either thoroughly incorporated with the excrements of horses, &c., and well decayed, would be equally good for your farm.

BEDDING PLANTS IN GREENHOUSE—VINES (*Pest*).—Remove the drawn bedding plants to a pit or frame where they will have more light, and be kept cooler and near the glass. If you have not a greenhouse, your only plan will be to keep them where they are until May, in the meantime cutting them back so as to induce low growth, and in May they may be removed to a warm situation, and protected with mats by day when the sun is powerful, and at night if frosty. The Vines just coming into bloom will require a temperature much too high for bedding plants, and they ought by all means to be removed to a cooler and lighter place. The Vines in flower should have a temperature of over 60° at night. Being very weak we should not allow them to carry more than a bunch to every 18 inches of rod or rafter; for instance, if the length of Vine furnished with shoots for bearing is 18 feet, it would not be allowed to carry more than twelve bunches.

CAMELLIA LEAVES SPOTTED (*J. W.*).—The leaves are spotted in consequence of the sun's rays striking powerfully on them. The only remedy is to afford the plants slight shade from the time they commence growth until it is fully matured, or throughout the summer until October. Keeping the leaves constantly wet will also produce the same result; yours have the appearance of water having stood on them and dripped from the edges.

PEAT (*T. N.*).—The specimen you enclosed is not fit for potting purposes. The peat or Heath mould used for potting is nearly all siliceous sand, with fine fibrous roots of Heath, &c., intermixed.

APPLE TREE BARK (*H. A. W.*).—We do not think the appearance you describe indicative of disease. Scrub the places with a hard brush dipped into a strong brine of common salt.

CALCEOLARIA CUTTINGS FAILING—PINKS TRANSPLANTING—FORMING LEAF MOULD (*A. E.*).—Your Calceolarias are suffering from the drying-up of the stem commonly known as canker or disease, for which there is no known remedy; but we think that in your case the cuttings which have failed were taken from the ripe flowering parts of the plant, those rooting and growing freely being taken from the soft, growing parts. Plant them out at the beginning of this month in trenches manured as for Celery, and shade and protect with mats on sticks laid across the trenches until established; they may be moved with good balls to their blooming quarters in May. The Pinks should be moved at once, and the layers, not pipings, be detached if rooted, which they ought to be if layered last season. They should be duly watered at planting, and occasionally until growing, but do not saturate the soil—merely make it moist. They should be carefully moved, preserving about the roots all the soil practicable. Leaf soil is most quickly made by digging a shallow hole in the ground, and saturating the leaves with water or liquid manure, and turning them over after three months every six weeks.

VINEY AS A GREENHOUSE (*A Constant Reader*).—Your house, having no sun in the afternoon, will answer better as a greenhouse than as a viney, and will be useful for growing plants for the conservatory. It will need but little in the way of alteration. The Vines will have to be taken out and stages provided. We suppose it is heated sufficiently to exclude frost.

HEATING WITH HOT WATER (*H.*).—The house will be efficiently heated by two rows of 3-inch pipes, a flow and return along both sides of the house and across one end, which would be a better arrangement than having them along one side of the house only, as shown in your sketch, which would have answered well for a lean-to, and will do in your present case, only the pipes all round would give a more uniform warmth throughout the structure. We should have a frame made and enclose a portion of the pipes with brickwork, raising it about 9 inches above the pipes, which may be covered with slates or

have rubble placed over them to a depth of 6 inches; then put in about the same depth of plugging material. This will give you sufficient bottom heat for propagating most kinds of plants. The frame will enable you to keep the cuttings close and moist without interfering with the other occupants of the house. An elliptic boiler would no doubt answer; but take care to have one that will not from its smallness require to be hard driven to give the requisite heat to the pipes, for the waste of fuel is then enormous.

GARDEN-WATERING ENGINE (*Foreman*).—The engine not throwing water so far as it did last year may arise from a cause easily overlooked. Captain Shaw, Superintendent of the London Fire Brigade, states that a scratch in the nozzle of a fire-engine delivery pipe, which an ordinary workman might overlook, will reduce its throwing power from 200 feet to 150 feet.

HYACINTHS, TULIPS, AND SCILLAS AFTER FORCING (*A. G.*).—They should be kept in a cool house or pit in a light airy position until they are well hardened off and the weather is more settled; or about the middle of this month they may be planted out about 2 inches deep in light rich soil in a warm border. The Hyacinths and Scillas may remain there permanently, but the Tulips should be taken up when the tops become yellow, and after taking off these and the roots, place the bulbs in a dry cool place until November, when they may be planted in the border. They are not worth forcing a second time, but are good for borders.

ORCHID CULTURE (*Idem*).—Of the two structures the better will be the Fern house, assigning them the lightest position, and keeping them there until the growth is complete, when we should remove them to the greenhouse, affording them the warmest position, but near the glass, and shading for a time from bright sun. Diminish the supply of moisture, and withdraw shade as the growths mature; keep the plants dry in winter, but not so much so as to cause the pseudobulbs to shrivel. They ought to be repotted at once.

PLACING CAMELLIAS AND AZALEAS OUT OF DOORS (*Idem*).—They should be kept in moist heat until they have made fresh growth, and then have more light and air; when well hardened off and the buds set, they may be placed outside in a position sheltered from winds and shaded from the sun, but not by overhanging trees. A cool house with an east aspect is much better to keep the plants in after the buds are set than placing them out of doors. The *Encharis amazonicus* should at once be repotted, and grown in brisk heat with moisture. Use a compost of two parts turfy loam, and one part leaf soil, with a half part of sandy peat and a sixth of silver sand, chopping up rather fine, but not sifting; and afford good drainage.

HOYA CARNOSA AND CHAMEROPS EXCELSA REPOTTING (*H. F. F.*).—Repot now, using for the Hoya a compost of equal parts of fibrous loam and sandy peat (the cocoa-nut fibre refuse will do), and old cow dung, charcoal in lumps between the sizes of hazel nuts and walnuts, broken bricks or crocks, and old lime rubbish, with good drainage. Place in the hotinery until the growth is complete, and then afford a light airy position in the conservatory, and no more water than sufficient to keep the plants from shrivelling. The *Chamerops* does best in a compost of sandy fibrous peat torn up roughly, three parts, and one part fibrous loam, with a half part in equal proportions of old dry cow dung, silver sand, and pieces of charcoal. The cocoa-nut refuse may be substituted for peat, adding a fourth of silver sand to it. It will succeed in the cool conservatory, being hardy in sheltered positions.

AMARYLLIS AND GENTIAN (*Dublin*).—We have no idea what the Amaryllis and Gentian can be with such monstrous bulbs and roots as you describe, but as they are growing freely in the open ground it is likely they are hardy, and only require the treatment of hardy bulbous plants, which is to keep clear of weeds and to mulch all round; and if they die down, cover them in winter with leaf soil or short litter, pointing it in in spring.

PLANTS FOR NORTH-ASPECT BORDER (*F. I.*).—As the border abuts on a lawn laid out in beds filled with bedding plants, we should have something of the same kind of thing for the border, covering the wall in the first instance with Ivy—say Regner's, and allowing it to spread on the ground, forming a band a foot wide at the base of the wall, and disposing of the remainder of the border in the usual way with bedding plants. We do not suggest arrangements, but are always ready to criticise proposed plantings.

PEAR AND APPLE TREES SURFACE-ROOTING (*Idem*).—It is an excellent sign. Do not cover them with soil, or very lightly, but mulch around the trees 18 inches or 2 feet from the stem with some rich compost or well-rotted manure, putting it on about half to three-quarters of an inch thick. We give ours fresh short manure, which we advise if the trees are not very vigorous and are bearing freely, applying it just after the bloom is past, and repeating the dressing at the beginning of July.

PLANTS FOR TRELLIS (*Welby*).—The best subjects are the Clematis, and of these we should have *C. Jackmanni* and *C. montana* major. If you wish for an evergreen, we know of none more suitable than Ivy. Roses of the Multiflora race, as *Laure Davoust*, and *Russelliana*, and *Ayrshire* Roses *Dundee Rambler* and *Queen* would also suit. The Vines and Clematises associate well together, but the Roses should be grown alone.

DRAINING GARDEN—MOSSY ORCHARD (*Idem*).—Though the subsoil is sandy loam, it may, nevertheless, require draining. Examine the ground by digging a hole to a depth of 4 feet, and if you find water drain to a depth of 3 feet 6 inches to 4 feet. The soil of the mossy orchard is both wet and poor. Drain, and dress with a compost of one ton of lime mixed with ten of soil or refuse, applying it in March or now.

DESTROYING SLUGS (*J. U.*).—Apply nitrate of soda to the ground at the rate of 1 lb. to 30 square yards, but before putting in the crops. We have no great difficulty with slugs, as we dress the ground with salt at the rate of twenty bushels per acre in March, or before cropping, and upon any appearance of the slugs we sprinkle the plants and soil about them with quicklime early in the morning or at dusk, repeating the sprinkling as the lime is washed away by rains, or the slugs continue their depredations.

INSECTS DESTROYING VINES (*Subscriber*).—The insect is a weevil, *Curculio pisces*, which is very injurious in a viney. Spread a sheet beneath the Vine at night, and shake the Vine rod sharply, when the weevils will fall on the sheet, and may be destroyed. This repeated a few times will thin their numbers. We presume the Vines were stripped of their loose bark, and afterwards dressed in the usual manner, the walls being thoroughly whitewashed. Any holes or crevices in the wall should be stopped with cement. We cannot lay too much stress on your taking the weevils; every one you destroy will help to prevent egg-laying. The tobacco juice of the manufacturer diluted with six times its bulk of water is useful, applying it through a roset watering pot; also the following:—4ozs. quassia chips, boiled ten minutes in a gallon of soft water, dissolving in it 4 ozs. soft soap. Wet the surface of the whole house with this two or three times, especially near the walls, just after dusk, and the following day water the whole house with tepid water. Neither

of the agents mentioned must be applied to the foliage of the Vines, but over any plants that will not be injured by the soft soap it may be syringed. We have also found useful sprinkling the floor of the house and border with guano, and then with water; if the floors, &c. are wet, sprinkling with water afterwards is unnecessary. If the Vines are in tender leaf a little air should be left on, as the ammonia evolved will scorch the leaves. Water well in the course of two or three days.

NAMES OF PLANTS (R. A. P.).—All specimens should be numbered. The large, *Pinus Nordmanniana*; the small, *Cedrus Deodara*. (*Tertie*).—We cannot name plants from leaves only. Those you enclosed seemed of a *Begonia*, and if so we could not name it, the varieties are so numerous.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### FEEDING FOWLS AT SHOWS.

MR. ADDIE'S letter in your number of March 19th is another instance of writing about that of which the writer does not know the facts. I have noticed with regret how very often the secretaries and committees of shows are publicly castigated about mere trifles. Why do not these persons communicate with the secretary, and, failing to obtain a sufficient explanation, then trouble you and occupy your valuable space with their complaints?

Now, as regards the subject of Mr. Addie's letter, I believe the report in your Journal was correct, for the birds had not time to stuff themselves with Indian corn and barley before the Judges commenced their duties the day before the Show. Most of the birds were not penned before twelve noon on Tuesday, March 3rd; and even if they had so stuffed themselves, we know very well that the Judges we engaged would have been the very last gentlemen to have mistaken overshooting for overfeeding. I do not think Mr. Addie could have thought of this when he wrote his letter. That Mr. Addie's bird was a little too full of food on the 4th of March is a fact, and our attention was drawn to it, not by Mr. Addie, but by Mr. Leeming, an exhibitor, and the bird received that care and attention which we always give when we notice anything wrong with any specimen. I should not have troubled you, but that I do think it monstrous that a Show managed, as ours is, by a Committee, all fanciers to a man, who thoroughly understand the treatment of every variety of bird usually shown, should be accused of indiscretion. If such had been the case I should not be the recipient of letters from all parts of the United Kingdom, thanking me heartily for the great care and attention their specimens always receive. To please everybody in feeding is impossible. Some say, "Do not give my birds soft food;" others cry out against hard food; some want the food put in tins, others on the floor, some in a little heap; some, again, ask for a little bread and beer to be given.—I wonder they do not suggest cheese as well. So that you see after all the Committee really must use their own intelligence in these matters, otherwise the Show would be brought to a standstill in the worry and bother of carrying out general orders, which in ninety-nine cases out of a hundred are mere fancies.—WM. HUMPHREYS, *Secretary, Northampton Show.*

### BLACK BANTAMS.

HAVING bred and exhibited this variety of fowl without intermission since 1863, I naturally feel an interest in any discussion appertaining to them, and it was this feeling which induced me to pass my remarks on Mr. Arundel's paragraph.

Anyons reading that paragraph who knows anything of the shape and style of the different breeds would associate Mr. Arundel's description of a Black Bantam with that of a Sebright, and I still maintain such a theory is wrong. If Mr. Arundel will read my last article again, he will probably see that I did not find fault with his points individually and separately, but collectively, as a whole tending to the "style" I object to.

I have not read the "Standard" alluded to, but I cannot believe Mr. Teesby or Mr. Dixon could have revised the Black Bantam portion; in any case their awards at the different shows do not agree with it. What I contend for is, that a Black Bantam should not approach in shape a Sebright; and when I say the tail should be rather drooping than otherwise, I mean it should not be upright, which constitutes a defect known as "squirrel-tailed," and nothing looks worse. My birds are certainly of a very different style from that described by Mr. Arundel, but I scarcely ever show them without winning. On the other hand, I do not know whether Mr. Arundel ever enters his birds for competition, but it is certain his name does not often appear in the prize lists. In conclusion, I hope my remarks are taken, as they are intended to be, in the sense of a fair and open discussion with one whose ideas on a given subject do not coincide with mine.—E. CAMBRIDGE.

AMERICAN FOWLS.—At my request the Secretary of the Oxford Poultry Show has kindly consented to give a class for American fowls (Leghorns, Dominiques, and Plymouth Rocks), with second

and third prizes, provided I will guarantee a cup. If any of your readers are willing to help me in this I shall be much obliged.—ARTHUR KITCHIN, *Westerham.*

## BROMLEY POULTRY SHOW.

HASSARD *versus* GEDNEY.

YOUR report omits altogether my evidence on oath, that Col. Hassard refused to receive his birds back when the mistake was discovered; even when the offer was accompanied by a promise to pay reasonable compensation for any loss sustained. The legal objections taken by Mr. Glynn, my counsel, were that, as there was no consideration between me and plaintiff, I was not liable, I being an honorary officer, and having sworn that I received no remuneration for my services. The Judge overruled this, and held that the deduction of ten per cent. from all purchase money, though it went to the prize fund, was a consideration. My counsel then submitted that no evidence had been given that I was anything more than an agent of the Committee who promoted the Show. The short-hand writer of the Court supplies me with the following notes of what then took place:—

"*His Honour.*—There may be something in the point you now raise; there was nothing in the other.

"*Mr. Glynn.*—My client was an honorary officer, and you have no evidence that he was anything more than the agent of those who promoted the Show.

"*His Honour.*—It is true that, whether he had anything more to do with it beyond acting as honorary secretary, has not been proved.

"*Mr. Glynn.*—I contend that, as an honorary officer, who acted as an agent and got nothing for his services, he cannot be held liable.

"*His Honour.*—The question is, whether he was more than an honorary agent of the promoters?

"*Defendant.*—Yes, I was one of the promoters, and shall have to hear my share of the loss.

"*His Honour.*—It is very honourable of you to say so; you were not compelled to admit anything prejudicial to your own case."—C. W. GEDNEY.

### LOW-HABITED PIGEONS.

I KEEP a few Tamblers in my garden and pay some little attention to their comfort. I feed them well, principally with tares and maize, with an occasional pinch of hemp-seed for a treat. I supply them with clean water in clean vessels daily, with a weekly bath, and have their loft frequently cleaned out and covered with fresh sawdust.

My neighbour, about 100 yards off, also keeps Pigeons—mongrels bred from Trumpeters well crossed with "duffers," Tumblers and Jacobins. His lockers are crazy concerns on poles close to and on the north side of his dwelling house, and he has converted an old tool-shed into a loft, which is the dirtiest place I know, bar the lockers aforesaid. He has five or six pairs at liberty; I have only four pairs.

I very much want to know why, under these circumstances, my Pigeons should have the bad taste to make frequent visits to my neighbour's low-bred birds, and why the latter are so wanting in good taste, to say nothing of good manners, as never to return these calls.

To-day a Short-faced Baldhead hen of aristocratic birth and bearing escaped from my aviary and was out of sight in an instant. In the afternoon I called on my neighbour, and there was my little lady fraternising with his plebeian duffers. Now why should she have settled down amongst them in preference to those of her own class flying about in my garden close around the house she had escaped from? She could not have joined the former without seeing the latter after her flight, and as she had left her mate and eggs in my aviary her instinct ought to have brought her home.—THOMAS F. SIMPSON.

[Your Pigeons show decidedly very bad taste. I have kept Pigeons for years, and they have never joined the farmer's birds, though my garden joins his. Has your neighbour some saltcraze, as it is called (*vide* "Brent's Book," page 93)? this may be the secret, I can think of no other. You can easily make some, and the effect may be to keep your birds at home. Again, have you cats that frighten your birds? A hurdle placed on the roof on the sunny side is much loved by Pigeons to sit and bask on—try that.—WILTSHIRE RECTOR.]

### PIGEON NOMENCLATURE.

IN reply to the question "TURKEY QUILL" asks me in the last paragraph of his contribution to your issue of March 26th under this head, I have to say that the colour known as blue chequer derives its name from the ground colour; while the colours known as red, yellow, and dun chequer derive their names from the chequer marks. I fancy the reason of this is, that while in

the blue it is the ground colour which is the most prominent or striking to the eye, in the other colours it is the chequering. At all events, old-established custom has so named them, and I observe in a copy of Fulton's new Pigeon book (part 1st), there are portraits of two Blue and two Red-chequered Antwerps so designated. The latter would be called by "TURKEY QUILL" either "Mealy Chequered" or "Red Mealy Chequered." I would now ask "TURKEY QUILL" a question. He says, "A silver Pigeon has two dun bars on the wings." I wish to know the name of the following colour—body a very light blue, so light that white can scarcely be distinguished on it, with two jet black bars on the wings. This colour was formerly seen in Baldpates, Turbits, and Dragons (not Dragoons), and may be yet; but I do not keep these kinds. It was called Silver, and the dun-barred colour was Silver-Dun. Would "TURKEY QUILL" also say what is the difference between the colours "Silver" and "Dun-Silver" he gives in his list under "Blues?" If the simple "Silver" has two dun bars (*vide* his third paragraph), what kind of bar has the "Dun-Silver?"—J. C. LYELL, *Monifieth, Dundee*.

### RABBIT-KEEPING.

A VERY mistaken idea prevails regarding what is necessary in the way of a hutch in which to keep Rabbits. Many persons seem to think that an elaborate arrangement is indispensable; that the hutch must be of regulation size, must have wire front, a sloping floor with gutter to carry off the water, must have one end partitioned off for a breeding pen, and numerous other adjuncts and conveniences which are usually found only in the rabbitries of large or wealthy fanciers. It is all very well and very nice to have these items all arranged in apple-pie order if one can afford to gratify his taste in such matters, but to say that it is in any way essential to success is sheer nonsense.

Rabbits have been, and are still, kept in common dry-goods boxes, with the cover fastened on by leather hinges, and a few holes bored around the sides for ventilation, and in this primitive manner most excellent success has been attained. Of course in such quarters cleanliness is indispensable. The box must be cleaned out and fresh litter given at least every other day; and daily were better.

Another simple arrangement is a shoe-box; this is usually about 3 to 3½ feet long, 15 to 18 inches deep, and about 12 inches broad; this is placed on the side, on supports, or fastened against the wall, with the door or lid hung from the upper side, thus lifting up. The door may be of wire cloth, lath, or simply the lid of the box with a few holes bored in it, and hung by iron hinges or strips of leather. One end of this box may be set off by a partition for a nesting room, this need not necessarily be over 9 inches wide. On this point I find I differ with most other writers on this subject. They advocate a nesting box of 12 to 15 inches in width, and the depth of the hutch either 1 or 2 feet from front to rear. My experience is that with those large nesting boxes the young Rabbits, as soon as able to crawl, will often get out of the nest, and get chilled, and be unable to get back again. Having lost a number of litters in this way, I have reduced the size of these boxes to 10 inches diameter for Lops and Belgians, and to 9 inches for the smaller varieties; and also when the hutch is deep I place a semi-partition about 2½ or 3 inches high across the nesting apartment, about 1 foot from the front of the hutch; entrance to the apartment by the doe being had by an opening in the back part of the hutch, through a hole 6 inches wide and 8 inches high. Hutches of this kind may be placed in tiers two, three, or four high.

Another and still simpler mode of keeping Rabbits is in an unoccupied room in any outbuilding. This can be divided into apartments by boards; the partition to be carried to a height of 3½ or 4 feet. The apartments may be of such size and shape as suits the fancy of the amateur. In one corner of the pen put a box, say about 10 by 15 inches, with a round hole 6 or 7 inches in diameter cut in one end; hinge the cover and fasten it down by a simple hook or button, so as to afford better opportunities to examine the young. Care must be taken to exclude cats and rats from the room. While speaking of cats, I would here say that it is a good practice where many Rabbits are kept to bring up a kitten or terrier dog in the same room with them; thus one is perfectly safe from rats, and the cat or dog never molests the Rabbits. For young stock I especially recommend keeping them in this last manner. My pens were 5 feet wide by 10 feet long, and four in number; and in one of these I have had as many as thirty-five Rabbits at one time, varying from six weeks to four months old.

They have ample room to exercise, and seem to thrive much better than when in more confined quarters, even in small numbers.—A. M. HALSTED.—(*The Pet-Stock Bulletin*.)

### EXAMINING THE INTERIOR OF A HIVE.

At page 266 in last week's Journal, is a letter from Mr. Pettigrew on "Loss of Bees in Hives Containing Honey," and on

the opposite page is a letter from Mr. Bagshaw on the subject of the best hives, praising the brown bees and Pettigrew straw hives. The first letter almost seems an answer to the second. Mr. Pettigrew says, "It is not to be expected that anyone who has not seen the hives can state with certainty why deaths or desertions have taken place. It is necessary for a doctor to have seen a patient before he can safely give a certificate as to the disease which carried him off." Thus Mr. Pettigrew likens his hives to a "patient" or the human body, and the simile is most true and exact; for though a doctor may have seen a patient, could he not more safely give the certificate when he had examined him? and could the doctor only examine the patient internally before he was carried off, what might he not effect in the way of a cure? And is not Mr. Pettigrew's hive exactly like the patient—*i.e.*, cannot be examined internally until it is carried off? But surely prevention is better than cure, and therefore, a natural *sequitur*, the hive which allows this internal examination to be made while still existent must be better than those which Mr. Pettigrew so happily likens to a "patient."

Again, as far as "the getting of honey and profit" goes, allow, for argument's sake, Mr. Bagshaw is right, yet it is surely not just to take one single hive as a fair criterion, and does not the loss of one or two hives in an apiary (which must and will take place where there is no means of internal examination), go far to counterbalance the profit made by the others? Take a case, my own if you like. I have fifteen hives, and I have already carefully examined them all. I found three of them crowded with bees with little or no honey, while four others were overstocked with honey but with very few bees. A fine day and a few minutes set this all right. I have examined my "patients" internally and saved the lives of all. The knowledge of how to do this we owe to an American, Mr. Langstroth.—BERKSHIRE AMATEUR.

### BEE-KEEPER'S CALENDAR FOR APRIL.

MR. B.—I have examined my hives internally several times without a bee-dress, and have not yet been punished for my temerity. To know and witness what is going on inside the hives makes bee-keeping doubly interesting to beginners like myself. The stronger hive has now four patches of sealed brood, and the two centre patches are much larger than they were when we first examined them. Every fine day the bees carry in a great quantity of pollen. What is it for?

MR. P.—This pollen is called bee-bread, and is mixed in the food given to the brood in their cells. Living perfect bees do not eat it; many hives die of hunger with plenty of pollen in their combs. In this country more pollen is collected than is generally used, and a superabundance of it in a hive is a great hindrance to the bees, by occupying cells that would otherwise be used for breeding purposes. Their instincts and industry, doubtless, prompt them in this uncertain climate to gather and store-up more than they require for immediate use. The patches of brood will multiply and increase in size till all the combs are filled with brood and eggs. Eggs are set as widely as the bees can cover them. The fertility of queens and the industry of working bees are marvels in the history of bee hives. When all the combs of a hive are covered with bees and filled with eggs and brood, it is in ordinary seasons and circumstances within three weeks of being ripe for swarming. In examining a hive to ascertain if the bees cover their combs, no smoke is used; the hive is simply raised high enough to let as see the bees in their natural position and state.

MR. B.—I have been told that the appearance of drones is a certain indication that a swarm may be expected. As I am anxious to know all that can be learned about queens, drones, swarming, comb-building, &c., together with the practical management of my hives, I hope you will pardon me if I seek enlightenment on certain points as we go on. I mean to think and see for myself, now that you have taught me how to examine my hives, believing that the teaching of experience is more valuable and trustworthy than that of books.

MR. P.—I am pleased to hear you talk thus, and believe that if you put everything we may say to the test of reason and experiment, you will become an adept in bee-management, and an advanced student in bee-history. Early drones as a rule indicate early swarms; but in many cases it is not so, for some hives have drone combs in their centres, and these produce drones long before they are ready for swarming, and some hives swarm before a drone is hatched in them. If the drone combs in a hive are on the outside or edges of the worker combs, we may safely conclude that it is filled to the swarming-point when drones first make their appearance. Bonner, the Scottish apianian of olden times, collected his family to rejoice with him on the day his drones first appeared. In the superabundance of his enthusiasm he used "to take a wee drap too much, and toddle to bed right fu on such occasions."

Next month we shall come to the consideration of the breeding and production of queens, swarming, and comb-building.

Meanwhile, Mr. B., you would do well to consider and compare different ways of managing bees, with a view to determine beforehand whether you will adopt the swarming or non-swarming mode of management.

Mr. B.—Please to explain both briefly, that I may fairly understand them and choose the better of the two, for while I listen to you I will use my own reason and judgment.

Mr. P.—Well, let me say that swarming is a law amongst bees—it is an instinct of their being, and tends to their preservation. Before hives become full, emigration and colonisation are thought of, and preparations are made inside for such events. When full of combs, brood, and bees, first swarms with the old queens leave their hives. A few days before they leave, eggs are placed in royal cells, which come to perfection in fourteen days, or in about ten days after the first swarms issue. When these cradled princesses come to maturity they begin to make strange sounds by piping and barking at one another, and these sounds may be heard for three days and three nights. Then second swarms, smaller than the first ones, are sent off. You will not fail to see, that by taking one or two swarms from a stock hive an apiarian has the great advantage of having young queens and young combs in his hives. He can, if he likes, take the honey from his stocks and keep younger hives. Besides, on the swarming principle he has all the bees in the honey hives wherewith to strengthen and make doubly strong those he selects for stocks. Again, on the swarming principle he can in ordinary seasons turn all the bees out of the stock hives three weeks after the first swarms leave them, put these turn-outs into empty hives, and take the honey from the stocks. Thus two or three swarms are obtained, and honey in quantity early in the season. The reason why the twenty-first day after swarming is named for turning out the bees is this, that then the brood is hatched, and the young queens have not begun to lay. The only sacrifice made in this turning-out process is the loss of the old combs. But as a set-off against this loss we have from 20s. to 25s. worth of honey from each stock hive, and if the turn-outs fill their hives with combs they are generally quite as valuable for keeping as the old ones would be. It is a great thing in bee-keeping to have hives filled with young sweet combs.

On the non-swarming system of management combs become old and black, queens become old and may die when there are no eggs in their hives. In honey seasons non-swarmers are generally too full of honey and too scant of bees for making eligible stocks for another season.

Mr. B.—But do we not get more supers filled with honey on the non-swarming principle than on the multiplying one?

Mr. P.—In seasons unfavourable for bees more supers may be obtained from hives not allowed to swarm than otherwise, and doubtless there may be other points on the side of non-swarming which I cannot at this moment think of; but taking one year with another, the swarming mode of management is incomparably better than the non-swarming one. In favourable seasons for honey-gathering best first swarms will rise in weight to upwards of 100 lbs. each, second swarms and turn-outs to 60 lbs. and 70 lbs. each.

Mr. B.—I think you have said enough to induce me to adopt the swarming system, which will enable me to increase the number of my stocks and have my bees in modern and commodious hives. I should like to have your opinion of the various kinds of hives in use. I wish to get the best kind for my swarms, so that I shall not need to change them in a year or two.

Mr. P.—Directions will be given for both modes of management. On the non-swarming system supers should be placed on hives about a week after their combs are covered with bees—that is, about fourteen days before they become ready to swarm. Guide-combs should be placed in the supers to induce the bees to commence work in them as soon as placed on the hives. By the end of this month some hives will be ready for supering. Supers holding about 10 lbs. of honeycomb are more saleable than larger ones. Straw and wood supers are more easily managed and kept warm than glass ones, and we can sell them of late quite as readily. Glass supers require a very warm covering of cotton wool, or woollen cloth; and when very large glasses (crystal palaces), are used as supers, it is desirable to induce the bees to build the combs in them both upwards and downwards.

If the weather is unfavourable for honey-gathering—preventing the bees from getting supplies from fruit-tree blossoms, they should be fed more diligently and liberally than they were last month, for now both more bees and brood need nourishment. As stated last month, bees without food in stores will not continue to sit eggs. If the weather be fine, and the bees gathering enough for their wants, they will continue to breed; but if cold weather set in when they have nothing stored up, they decline to sit eggs, and sometimes cast out half-hatched brood.

It is well known that I use and recommend straw hives of considerable dimensions. They are beautiful and cheap, better

for health and honey, and more easily managed than wooden or complicated hives. The teaching of experience will lead all honest practical apiarians, seeking great results, to use straw hives of simple construction, large size, and beautiful build.

Next month will be one of great activity. Few practical instructions are needed for April.—A. PETTIGREW, *Sale*.

### CRYSTAL PALACE BEE AND HONEY SHOW.

In common with many of my bee-keeping brethren, I offer my congratulations to the promoters of the forthcoming Show at the Crystal Palace. I trust that it will be worthy of the place and of the country, and that those who have the management will endeavour to make it a truly national event; for then it will give an impetus to bee-culture in many a remote district. Like the great Christmas Cattle Show, it will be sure to attract visitors from far and near; many will return to their homes with fixed impressions of hives, supers, &c., and will tell to their less-favoured friends, who were not able to visit London, the wonders they have seen; for I have no doubt, if the season be propitious, there will be some wonderful productions in the way of supers, &c. I hope there will be plenty of space allotted for the Exhibition, so that visitors need not be constantly obliged to be on the move, but may be allowed some reasonable time for inspection. When a person is deeply interested in anything, is just mastering the details, and has some faint idea of how such-and-such a thing was done, but still has not quite clear views about it, what can be more tantalising than to be told that he must "move on?"

If the Exhibition be carried out in a national spirit, it will serve as a model for local shows; if not, and there be a manifest leaning to any particular class, it will be sure to cause annoyance and ill-feeling, and the great object of the Exhibition will be frustrated. If all kinds of hives have a place for competition—"a fair field and no favour"—no class of hivists can be dissatisfied, and I am inclined to think that the skilled apiarian who pins his faith to the much-despised straw skep of large size, will not have to nail his colours to the mast if profit be taken into consideration. On this point there is great diversity of opinion, therefore let each hive stand on its own merits; but I cannot help thinking that, as the schedule now stands, the straw hive is all but thrown overboard.

Undoubtedly the schedule published has been scanned with great interest; it will be freely and fairly criticised, suggestions will be made, and I trust, before the last schedule is sent out, that the originators of the scheme will weigh well what outsiders have to say, retain the good, and cast the bad away. It will be impossible to draw up a list of prizes to please everyone, but it is quite possible to draw up one that will meet with general approbation.

With regard to the prizes, I think they are cut up too small; I think some of them ought not to come under £5. For a small local affair it would be all very well. No doubt the majority of exhibitors will be amateurs, who will think more of the honour of winning the prize than of the mere money value; at the same time, there are many amateurs who would compete for £5, who would not take the trouble of sending their produce or stock to London for a chance of winning only £2; for although some, who have large apiaries, by sending hives, supers, &c., and entering for competition in several classes, may net a considerable amount, yet it must not be forgotten that there are many enthusiastic bee-keepers who possess but few hives, and could perhaps only compete in one class. Therefore it appears to me that the owner of a small number of hives will be at some disadvantage.

There is one class that I think ought to be expunged from the list—Class Q. I cannot see why there should be a prize for honey because it has been extracted by a slinger, when it is admitted by one of its advocates that machine-extracted honey, though a little more in quantity, is a little worse in quality. If anyone who has an interest in selling the machine will give a prize out of his own pocket for extracted honey, no one has a right to say a word against it; but I think money ought not to be voted from public subscriptions for that purpose. I have nothing to say against the extractor, and should approve of giving a prize for the machine if it does its work well; that would be quite sufficient to encourage its introduction where it is not at present used.

I consider the prizes for the miscellaneous class on the whole good; but I have some misgivings about the essay department. On all hands it is admitted that the fertilisation of queens by selected drones is a matter of uncertainty, and those who have taken the most pains to ensure certainty have failed. If the writer of the best essay advances some clever theory, which on paper seems conclusive, but which may never have been tested, is he to have the prize? I think to no one ought this prize to be awarded unless he can prove, without the shadow of a doubt, that this (to me impossible feat) is possible. With respect to the other essay, the man who can convincingly point to the cause and prevention (I prefer Mr. Pettigrew's phrase to the

wording of the schedule) of foul brood, will honestly deserve the £5.—J. OLIVER, *Hartington, Derbyshire.*

## OUR LETTER BOX.

COCK INATTENTIVE TO HENS (*G. T.*).—The complaint you make is a common one at this time of year. We can only prescribe patience, as we always find doubts disappear as the season goes on. Early eggs do not hatch so well as later ones, and weather sometimes spoils the early eggs.

HENS' EYES CLOSED (*Blindman*).—Apply some golden ointment to the sores with a camel-hair brush, and when they are healed use a strong solution of alum and water, with which you must bathe the lids till the eyes are open again.

PILLETS EGG-BOUND (*Aberfeldy*).—We have no doubt both birds were egg-bound. If they were not, they have sustained some injury in the back. The absence of the cock has nothing to do with it. The formula of the food in question is given by Mr. Wright. We do not know how it can be procured unless specially prepared.

CHICKENS SUFFERING FROM SCOUR (*H. E. T.*).—We do not see why your chickens die. The food is good, but too stimulating for chickens. Give boiled egg, no rice, no toppings. If your ground oats are so well ground that they form a smooth paste when slaked, continue them; if they mix-up rough as though fine chaff were mixed with them, give them up. You may give some cooked meat chopped fine morning and evening, and a little midday—no raw meat, no pepper. Give them some beer to drink. You speak of shredded grass. That would imply they are not where they can get grass. If it be so, let them have daily some large sods cut with plenty of earth, and they will tear them to pieces and find many helps in it. We believe lots of chickens are being killed by overfeeding and improper food.

HEATING A POULTRY HOUSE (*F. I. L. K.*).—If anyone would heat all the fowl houses we have for nothing we would not accept the offer. We do not, therefore, advise you to do anything of the sort. If artificial heat is to be at all employed beneficially, either the fowls must be kept within the house or the whole atmosphere of their runs must be warmed. There is always illness among poultry when they are kept in a heated place. They suffer from the change when they leave it. If you determine to adopt it, the flue carried round the house would easily give you a temperature of 50° or 60°, which is all you require.

COMMENCING BRAHMA-KEEPING (*J. I.*).—In the space you mention (15 yards by 9), and undertaking that the birds shall have the additional run you speak of, you may keep twenty birds easily. The difference between the Brahmas is only one of colour. Nothing is so valuable as a dark Light Brahma. You do not say what your object in keeping poultry is, whether for profit or fancy, and whether or not you look for a return from market, or from the sale of stock birds. We cannot see profit in keeping half-breeds, and advise you to begin by buying some good eggs and rearing your future stock. We cannot recommend anyone for the sale of such things, but advise you to look down our advertising columns. You will have a choice of respectable names.

WHITE LEGHORNS (*H. H. H.*).—We have had the White Leghorns, and did not find them remarkable for any particular property. We liked them so little we did not attempt to breed them.

MARKING DUCKS (*J. N.*).—It is very common where many Ducks run together to mark them with a piece of wire round the leg; it forms a ring, and is worn without pain or inconvenience to the wearer. One mark on the right leg, another on the left; if a third, he marks with two rings. It is, however, easy to mark in the web of the feet by punching holes. The two large webs supply room for marking in many ways, and the two feet making four webs offer a considerable surface.

BRAHMAS NOT LAYING (*A. B.*).—It is very possible your hens have laid their first eggs, and are about to sit. They will not at their age lay so many as pullets. It is hard to allowance laying hens; they eat more at one time than another, and as a rule they should be fed as long as they will run after food. Give them slaked meal or ground oats morning and evening, and some whole corn at midday. Discontinue potatoes.

VULTURE-HOCKED CHICK (*J. S. K.*).—There is no cure, and to eradicate the feathers would be unfair. The only grain for chickens should be bruised wheat; bread crumbs, egg boiled hard and chopped fine, and scraps of meat are best for their chief sustenance. There is no book on Bantams only.

HATCHING ARTIFICIALLY (*I. C.*).—You will see our reply to another correspondent. It never has been practised successfully. Employ hens both to hatch and to rear. The example of the Sussex cottagers, which is profitable, should be followed.

FOOD FOR YOUNG PARTRIDGES (*Everfield Place*).—Young Partridges should be fed on chopped egg, bruised wheat, bread-crums, and curd. They must always have water. If the hen with the young is put near a grass or clover field, they will run therein, and find much of their food; but this is only a help. The hen should not be allowed to leave the rip, and it should be secured from vermin at night. Oats are great destroyers of young Partridges. Maggots of any kind are very servicable to young Partridges, but especially the larva, or "eggs," as they are usually called, of the ant. In June and July they prefer these to any other food.

SPICE BIRD, WEAVER BIRD, WAX-BILLS (*St. Edmund*).—There are so many kinds of Wax-bills, and the plumage varies so much, that it would not be easy to describe them, but they are all generally considered pretty birds, are very small, and, as their name implies, look as if their beaks were made of red sealing-wax. They cost about 12s. 6d. per pair. Spice Birds are a little larger than Wax-bills, and although not gay in colour, are pretty. They, like Wax-bills, require care and warmth to keep them in health; they cost about 15s. per pair. Of Weaver Birds there are many varieties, and they are larger and stronger than either Spice Birds or Wax-bills. Some are exceedingly pretty in colour, and the price varies from 20s. to 50s. per pair. All these birds belong to the class of Finches, and eat millet and canary seed.

CRYSTAL PALACE BEE AND HONEY SHOW (*R. S.*).—We cannot insert the letter unless all the innendos and motives attributed to others are omitted. Surely an opinion may be maintained without trying to sting an opponent.

INCUBATORS (*R. C.*).—Not one has succeeded. We have known many tried and in every instance discarded.

WHEAT DAMAGED BY FIRE (*H. C.*).—It will not injure either young or old fowls.

RABBIT WITH ABSCESS (*W. P. H.*).—Your Rabbit has an abscess behind its ear. This should be lanced, and the pus squeezed out; leave the wound to heal of itself. Do not alter the feeding, but give a few oats in addition daily.

DRONES IN MARCH (*A. H. M.*).—There was no drone in your letter when it came. The envelope was opened. We believe that sometimes in strong hives a few drones are to be found as early as March. It may be an instinctive arrangement, as where the queen is getting old; possibly also it indicates a failure of her breeding powers, and a return to the normal condition of her birth before she had found her mate.

BEES REFUSING FOOD (*Dover*).—The syrup which your bees will not take is either too thin and watery, or it is made of bad sugar. If the sugar is good, bees will take it if mixed at the rate of weight for weight, or 1 lb. of sugar to one pint of water. Better have less water than too much. Some few years ago we bought 34 lbs. of sugar of a beautiful grey-sandy colour for our bees. It was offered to them in saucers, but they would not touch it. It was boiled afresh in more sugar, still they would not take it. It was poured over the combs, and even there it was allowed to remain. We cut all the wet combs out at last, for there was some poisonous matter in the sugar.

## METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barome- ter at 32° and Sea level.	Hygrome- ter.		Direction of Wind.	Temp. of Sun at 1 P.M.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
March.										
We. 25	30.470	43.6	42.0	N.	45.9	57.1	36.1	102.1	39.9	—
Th. 26	30.418	59.1	39.1	S.E.	45.5	55.4	34.9	86.5	28.3	0.016
Fri. 27	30.085	53.2	46.5	W.	44.8	65.4	32.1	109.7	39.3	0.022
Sat. 28	30.149	47.8	44.1	W.	46.4	60.2	40.3	108.8	39.0	0.010
Sun. 29	29.823	55.8	50.0	S.W.	47.7	59.2	47.8	83.5	46.9	0.066
Mo. 30	29.823	50.0	44.1	W.	47.9	57.5	44.9	103.0	42.7	—
Tu. 31	29.668	52.3	50.7	W.	48.0	56.3	48.1	67.4	46.2	—
Means	30.102	49.8	45.1		46.6	58.9	40.2	94.4	39.0	0.114

## REMARKS.

- 25th.—Bright, clear, and fine all day, but rather cold.  
26th.—Fine morning though rather cloudy; very fine during the remainder of the day.  
27th.—Very fine day; a white butterfly seen. Rain in the evening with high wind.  
28th.—Fine but windy, fair till the evening, then rain and high wind.  
29th.—Stormy night and morning; rain in the evening, and another stormy night.  
30th.—Fair all day, except a slight shower about 3 P.M.  
31st.—Wet and stormy early; sunshine and showers in the middle of the day; rather brighter towards evening, and a splendid night.  
Temperature nearly the same as that of the preceding week. Frequent showers and high wind during the last four or five days, but the quantity of rain that has fallen has only been small.—G. J. SYMONS.

## COVENT GARDEN MARKET.—APRIL 1.

THE markets generally are very quiet, this being a broken week on account of the approaching holidays. The supply is ample, especially of Grapes and Strawberries; among the former we notice some good Lisbon Black, better than we have seen for some years, selling at 8s. to 4s. per pound. An excellent parcel of St. Michael's Fines is also on the market at reasonable rates.

## FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	4	0	3	0	Mulberries.....	1	0	0	0
Apricots.....	do.	0	0	0	Nectarines.....	do.	0	0	0
Cherries.....	1	0	0	0	Oranges.....	1	0	0	0
Chestnuts.....	1	0	20	0	Peaches.....	do.	0	0	0
Currants.....	4	0	0	0	Pears, kitchen.....	do.	2	0	0
Black.....	do.	0	0	0	dessert.....	do.	3	0	0
Figs.....	do.	0	0	0	Pine Apples.....	1	0	0	0
Filberts.....	1	0	1	0	Plums.....	4	0	0	0
Cobs.....	1	0	1	0	Quinces.....	do.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	1	0	0	0
Grapes, hothouse.....	1	0	20	0	Strawberries.....	1	0	0	0
Lemons.....	1	0	12	0	Walnuts.....	1	0	0	0
Melons.....	each	0	0	0	ditto.....	1	0	0	0

## VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	doz.	3	0	0	Mushrooms.....	pottle	1	0	0
Asparagus.....	100	4	0	0	Mustard & Cress, punnet	0	3	0	0
French.....	12	0	0	0	Onions.....	bushel	4	0	0
Beans, Kidney.....	100	2	0	0	pickling.....	quart	0	6	0
Broccoli.....	doz.	1	0	0	Parsley per doz. bunches	4	0	0	0
Cabbage.....	doz.	1	0	0	Parsnips.....	doz.	0	9	0
Capsicum.....	100	0	0	0	Peas.....	quart	10	0	0
Carrots.....	bunch	0	8	0	Potatoes.....	bushel	3	6	0
Cauliflower.....	doz.	3	0	0	Kidney.....	do.	0	0	0
Celery.....	bundle	1	6	0	Round.....	do.	0	0	0
Coleworts.....	doz. bunches	2	6	0	Radishes, doz. bunches	1	0	1	0
Cummers.....	each	1	0	0	Rhubarb.....	bundle	0	9	1
Endive.....	doz.	0	0	0	Salad, per bundle	1	6	0	0
Fennel.....	bunch	0	0	0	Savoy.....	doz.	1	0	0
Garlic.....	lb.	0	6	0	Scorzoneria.....	bundle	1	0	0
Herbs.....	bunch	0	3	0	Sea-kale.....	basket	1	0	0
Horseradish.....	bundle	3	4	0	Shallots.....	lb.	0	3	0
Leeks.....	bunch	0	3	0	Spinach.....	bushel	2	0	0
Lettuce.....	doz.	1	0	0	Tomatoes.....	doz.	0	0	0
					Turnips.....	bunch	0	0	0
					Vegetable Marrows.....	0	0	0	0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 9—15, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.								
9	Th	Fire Insurance must be paid.	55.0	35.3	45.2	32	19	45	21	2	58	8	59
10	F	Cambridge Easter Term begins.	55.9	33.5	44.7	16	17	5	45	6	8	3	100
11	S		56.0	35.2	45.6	20	15	5	42	8	33	11	101
12	Sun	LOW SUNDAY. [8.30 P.M.]	55.3	36.4	45.1	27	13	5	49	6	7	4	102
13	M	Meeting of Royal Geographical Society.	55.6	33.9	44.7	17	10	5	50	6	93	2	103
14	Tu		57.0	36.1	46.6	17	8	5	52	6	42	4	104
15	W	Royal Horticultural Society, Committee Meetings and Early Rhododendron Show.	53.4	37.8	48.1	21	6	5	51	6	55	4	105

From observations taken near London during forty-three years, the average day temperature of the week is 56.2°; and its night temperature 35.5°. The greatest heat was 73°, on the 14th, 1852; and the lowest cold 20° on the 19th, 1863, and 15th, 1893. The greatest fall of rain was 0.56 inch.

## A NEW MODE OF GLAZING.

**T**HAT the reduction in the price of glass has not been met by a corresponding reduction in the expense of fixing it to its framework, is much to be regretted. Invention, it is true, has not been altogether allowed to lie idle in the matter, and various modes have been adopted with the view of dispensing with the usual quantities of putty and paint; and slips of wood to fix on, instead of the putty or in substitution for the groove in the bar, have been adopted, as well as several other methods. Most, if not all, of the modes hitherto suggested have failed, however, to secure all that was expected of them, and that adopted a century ago seems to be the most general one still; nay, with the exception of now and then a trial case of some new plan, white lead and putty are the all-important agents. But I am not sure that this state of things will continue; the present age is an inventive one, and it is not unlikely that something may be found out that will alter the stereotyped mode of proceeding. The removal of old putty, or rather its falling off, and replacing it every now and then, involve an expense that everyone would like to get rid of, and it is certainly possible to remedy this to some extent. A plan I saw a few days ago, though not in itself perfect, was, nevertheless, a great advance in this direction, and as it was said to have answered well during the past winter, it is well worthy the attention of all who contemplate erecting glass houses. It is equally adapted for the single-light frame as for any other piece of glazing where glass has to be secured to wooden or iron bars; for although in the example in question the bars were of wood, a little extra contrivance would adapt it to iron bars.

In the garden of Charles Neve, Esq., at Chart Sutton, Kent, a span-roofed house for Grapes and Peaches was erected last year. The glazing was effected without putty or any substitute for it. The house did not differ much in outline from many others. The north lights were much the smallest, and made to open to admit air, while those on the other side were fixed; and the rafters being of considerable length, the bars were proportionably stout, and every third or fourth one was a rafter. The glazing bars were much stouter than ordinary, and cut with the usual rebate for the glass to lie on, but the rebate was somewhat deeper. This extra strength was required for fixing the blocks which secure the glass in its place.

Now, so far as has been explained, the construction does not differ from that of most houses glazed with putty, but none was used here, the glass being laid flat in its place without anything of the kind, and kept there by a series of cork wedges placed between it and some little blocks secured to that portion of the bar which is left between the rebates. These little blocks are small pieces of deal not more than 2 inches long by about three-quarters of an inch wide, and perhaps three-eighths of an inch thick; being chamfered at the corners, two of them are fixed to the top part of the

rebating bar just flush with the upper side of it, and being opposite each other, resemble a number of octagons of somewhat less than 2 inches across. In the case referred to they were about 15 or 18 inches apart on the bar or rafter, being placed, in fact, where there was an overlap in the glass. Now, it will be easily seen that by this contrivance the glass can be readily put into its place, and the question will be asked, How is it kept there? This, I may say, is the easiest part of the affair, and the mode in which it is done is, I consider, the especial merit of the invention, which I believe is in the course of being patented, but there is no harm in making it known. The plan adopted was simply to secure the glass in its place by thin strips or wedges of cork between it and the small blocks above alluded to; ordinary bottle corks cut to the suitable size answer the purpose very well, as those I saw were not much thicker than an old-fashioned penny. It is easy to conceive how quickly a quantity of glass can be fixed by this mode of procedure; and I am told the house has passed through the winter satisfactorily, not a square being cracked by the frost. The squares were certainly not small, being upwards of 20 inches long by 14 wide, and I think 21-oz. to the foot, but of the weight I am not certain.

It may be asked, What hindrance is there to the water, driven by the wind to the outer edge of the square, passing between the glass and the glazing bar to the inside of the house? To prevent this, the portion of the bar on which the glass rests is cut into a groove, along which the water flows to the bottom underneath the glass; but I believe this portion of the contrivance was not so satisfactory as the rest, and some improvement is contemplated in the next house to be erected. I suggested bedding the square in putty in the usual way, but not to let any appear above the glass; but the wish to do away with putty altogether induced the inventors to dispense with it underneath as well as above. The step taken is one in a direction that I trust will be followed by many others having the means to do the method full justice; and the fact of the house having passed through the winter without a single square broken, is a proof that this method of glazing has its advantages. Looking at the house from a short distance off the appearance of the roof is like that of any other greenhouse structure, except in being regularly dotted over with octagon-shaped little blocks (for the two opposite each other resemble that figure), which break the monotony of the plain rafter, and form a pleasing feature. This mode of glazing is adapted to any description of glass structure, even to the single-light frame, and I trust it will come into use so far as to test its merits in competition with the other modes of glazing in general use, and probably some improvements may be effected.

Old readers of gardening periodicals will remember a plan of glazing recommended, I believe some forty years ago, by Messrs. Cottam & Hallan, extensive bothouse builders, and which in some degree resembled the above; but I believe that instead of small wooden blocks with

cork fastenings, they used screw nails with pieces of leather between their heads and the glass; but the plan did not seem to answer, and consequently fell into disrepute. The present mode would seem to be a great improvement, as by it the whole of the glass in a large house could be taken out in a very short time, as it is only to push out the thin cork fastenings and the glass is loose, and in such houses as those used for Grape or Peach-growing, where full exposure is wanted for a time, the glass can be taken out, packed away, and brought out and put back in its place in a very short time. At the present day, however, most houses are wanted in winter to keep the store bedding and other plants, consequently a naked roofless house is rarely met with. As the materials used are more durable than putty, and must cost very much less in the first instance, there is every chance of this system coming into favour, especially if some provision can be made to prevent the water driven to the sides of the square passing underneath the glass, which I think might be done by bedding the glass on soft putty in the usual way, and giving a rather thick coat of paint on the outside, so as to fill the cavity between the square of glass and the woodwork with the paint, allowing the latter to encroach a little way on the glass, as is done in painting the roofs of glass houses in an ordinary way. Perhaps some will say this is a compromise with the putty system, but it still maintains the principle of no putty outside, and would insure a more perfectly watertight house than can well be made without it, especially when the roof is flat.

The position of the house is fully exposed, being upwards of 400 feet above the sea level, and the south-west winds are often very high; nevertheless, the conservatory attached to the residence contained some well-grown and well-flowered plants, many of which had been wintered in the house alluded to, and all reflecting great credit on Mr. Neve's excellent gardener Mr. Munn. Specially notable were some large well-flowered plants of *Cyclamens* and *Deutzias*; Indian *Azaleas*, Chinese *Primroses*, and other things were also good. Outside, some beds were gay with *Crocuses* and *Primroses*, two of the best early spring flowers we have; while in the inner border some excellent plants of the hardy *Cyclamens* were pointed out that had done good service last autumn, and even at the time I saw them (the third week of March), were highly ornamental by virtue of their foliage. Forget-me-nots were coming on, but, as at other places, they seemed to have suffered by the winter.

I was told that Mr. Neve liked the mode of glazing referred to so well that he intended to glaze another house, which was being erected, in the same way, with probably some little improvement, retaining, however, the main features, which Mr. Neve conceived to be right. At the same time he wished it to be known that the invention of substituting wooden blocks and slips of cork in place of putty was due to another, and was suggested to him by his own gardener having seen the original at another place, and made a model of it, which was exhibited at more than one horticultural show in the neighbourhood. A Mr. Stapley, gardener to Capt. Pattinson, of Biddenden in this county (Kent), was the original inventor of this system, and it certainly does him great credit. I trust that further experience will confirm the good opinion both entertain of its usefulness; and as painters' and glaziers' bills form the greatest item in hothouse building and keeping-up, anything that will lessen them must be a boon.

If it be asked whether further improvement in the way of applying cork as an elastic substance to secure the glass in its place could be effected, I would suggest a broad-headed screw nail instead of the wooden blocks, using the cork slips or wedges in the same way as described; or probably the latter may be substituted by pieces of indiarubber or some of those compositions which resemble it, and of which there is a great variety. Let us hope that in this age of invention some mode of glazing is in store for us that will supersede the present costly system of having to replace the putty of our glazed structures every two years or oftener, involving also a charge for glass. How far the method now described will answer our requirements must be left for experience to determine, but so far it would appear to be satisfactory.—J. RONSON.

**ROOM-GARDENING.**—One of the prettiest objects I ever beheld is a Spruce cone filled with sand and grass seed, which sprouted and grew out of the scales. It is now as large as a cocoa nut with the husk on, and of the most vivid green colour. The

grass grows with a luxuriance that is remarkable. To produce this charming specimen the cone was baked in a stove oven till the scales opened out equally. It was then carefully filled with equal parts of sand and grass seed, a string tied to the top, and the whole suspended in the dark, in a jar, with water enough to come half way over the cone. In a week it was placed in the sunlight, when the seed sprouted rapidly, and in a month filled a gallon jar completely. It has been taken out and hung in the window exposed to the air of the room. Every morning it is thoroughly soaked in milkwarm water.—(*Correspondent of New York Tribune.*)

## MUSHROOM CULTURE.

[Read at the Maidstone Gardeners' Mutual Improvement Association, April 1st, 1874.]

ALTHOUGH I am unable to give the exact date when gardeners of this county first practised the cultivation of the Mushroom, I am right in stating that for fully 150 years Mushrooms have been grown and esteemed in Kent as an article of food; for in a book on gardening, written by Bradley in 1724, their cultivation is alluded to; and again in the second edition of Miller's "Gardener's Dictionary," published in 1754, or thirty years later, an improved system of cultivation is given, such as was practised in those days by the market gardeners near London.

It has long been known that the family of *Agaricus* to which the Mushroom belongs is a numerous one, and that there are many poisonous as well as edible species among them, but it is one of the latter division, called *Agaricus campestris* or common field Mushroom, which seems to have been the sort first cultivated. It has been handed down to us by our earliest celebrated gardeners as the best species for kitchen use, and I believe it is still recognised with the same favour; for although there are many other edible sorts, they are not sufficiently known, or their wholesomeness is questioned, and the difficulty of distinguishing them from the poisonous species acts as a barrier to their cultivation; even if they were better known I have a doubt if they would ever take its place.

Among the numerous operations of gardening the cultivation of the Mushroom may be taken as one of the most curious, and to those who are inclined for study here is material for instructive observation, which, if only directed to finding out for themselves how a Mushroom is produced, and watching its development, cannot fail to prove interesting. If the opinions of some of our early authors be accepted as true, Mushrooms first spring from seed which is so small as not to be visible to the naked eye, but in such enormous quantities as to amount to many millions from one Mushroom. When these seeds are deposited in a substance favourable to their development they produce what is called spawn, and this in time becomes a Mushroom. Spawn when in good condition is a fine white fibre, like minute threads running in all directions through and over the substance containing it, and these threads, when deposited in suitable material, produce a quantity of small white tubers which develop into Mushrooms.

I will now enter upon the more practical part of my paper, and will begin with the preparation of spawn. A hundred years ago or more spawn was sought for at places where horses were kept, in dry dunghills, and was also collected from old rich pastures in September, the season at which Mushrooms spring-up without artificial aid. Since that time, however, the preparation of spawn by artificial means has developed into quite a trade among nurserymen, so that those gardeners who do not make their own spawn, and have not a great demand for Mushrooms, have an easy means of procuring it. On the other hand, there are some gardeners as well as growers for market who find it most convenient to make their own spawn, and I think every gardener should try his hand at it, in case it should ever be required of him. About fourteen years ago I made about fifty cakes of spawn, and the first Mushrooms I ever grew were produced from it, and this is the way I made it.

Collect a barrowful of cow dung from cows that are fed on dry fattening food, get also about the same quantity of horse droppings, from which the coarse straw should be separated; likewise get about a bushel of sifted loam, with little road grit to add to it if likely to become too close. Take it all to a dry shed and lay the manure out to dry. While this is going on procure a quantity of clean fresh straw and chop it into lengths of about an inch. In due time mix these ingredients well together by treading and beating so as to crush all solid substances,

leaving it like so much thick mortar; lay the whole up to dry for a time, and afterwards proceed to make it up into bricks of about a foot long, 8 inches wide, and 2 inches thick. A wooden frame of that size should be provided for the purpose, and this should be laid on a firm floor and the material rammed into it, first sprinkling a little sand over it to prevent the material from clinging to the frame. Cut the sides off even, and when the required number of bricks are made lay them in an airy place to dry, taking care they do not touch each other. When they are about half dry they are fit to receive the spawn, and for this purpose each brick should be perforated with two or more holes half way through; these holes may be 2 inches in diameter; fill them full of spawn tightly, and add a little of the cow manure plastered over them to keep it in its place. After all is done make up a thin bed of half-spent horse dung on the floor, and upon this pile-up the bricks the same as is done with unburned bricks in a brickyard, and as openly as possible, so that the heat may circulate amongst them. Let the whole terminate in a point, whether the stack is in the form of a ridge or otherwise, then cover with a foot thick of the half-fermented dung; this will give a gentle heat through the pile of bricks, and will set the spawn working through them. They should be frequently examined, and when they have the appearance of white mould they may be taken out and preserved in a dry place to be used as wanted. Take care that the spawn do not get too far advanced, for if it should become developed into numerous white threads visible to the eye, it cannot be depended on for a crop.

The spawn of the Mushroom being obtained, I now come to the cultivation, and this is done upon beds made for the purpose either in a regular Mushroom house heated artificially or in sheds and cellars, also in frames on half-spent Cucumber and Melon beds, and in the open air. For all these different modes, which I will take in the order they are named, the preparation of the materials is about the same. It is this: Collect the necessary quantity of fresh horse dung that has not been previously exposed to wet or fermentation, and clear it of long straw, leaving only a little short litter, which will do no harm; add to the manure about one-fourth of its bulk of half-rotten leaves, and if likely to be too light or spungy, add a small quantity of dry mould, otherwise do not use this; lay these materials under cover to ferment. The heap should be turned about twice a-week till the rank heat has passed off; after that proceed to make-up the bed. This should be done by degrees in layers of 2 or 3 inches each time, and each layer should be well beaten together until the whole bed is formed into a solid mass from 8 inches to a foot thick. Make the surface of the bed as even as possible, and take care that the bed is as firm at one place as another, so that the heating may be regular. Beating the beds firm is a very essential point in Mushroom culture in whatever plan they may be made, for if the bed is not beaten the little Mushrooms will just show themselves on the surface and then disappear altogether.

After the bed is made, thrust a trial stick or two into the body of it, or to some a thermometer would, perhaps, be a safer guide to ascertain the correct heat; when this has declined to between 80° and 90°, and your judgment, from the working, leads you to believe that the heat will not increase, you may spawn the bed. This is done by making holes about 3 inches across, the same in depth, and 8 or 9 inches apart; fill each hole quite half full, or even more, of spawn, and if it is in one solid piece it will not matter; press in the spawn firmly, and fill each hole up with some of the material of which the bed is made. Beat the whole bed over again and make the surface even. About a fortnight after the spawn has been introduced examine it, and if it is found vegetating freely in the bed, it is a good sign that it is going on well; sometimes it will take longer than a fortnight, but seldom less. When the spawn is in full working order cover the bed with 1½ inch of rich loam, make it even over the surface, and beat it firm. The soil should not be too wet nor too dry, but in a medium state as regards moisture, so that when beaten it may exhibit a smooth solid surface. If the earth is too dry and of a loose texture it is not so favourable to the growth of the Mushrooms; they are apt to become weakly, of inferior quality, and they cease to appear much earlier than would otherwise be the case.

After the bed is thus finished-off the temperature may range from 50° to 55°, and the light should be excluded. Maintain this temperature till the first crop attains perfection, when it may be reduced a few degrees till they are gathered, then advance the temperature again to the former standard; and

if the heat is declining very much, place a layer of soft hay or straw over the bed, and a second crop will no doubt appear. Proceed in this way till the bed is exhausted. In the meantime it may be found necessary to apply water. This work must be done with caution in regard to the quantity given, the manner of applying it, and the temperature. If water is applied too freely it will destroy the spawn, and if given cold or in quantity it will be likely to destroy all and render the bed useless. The water used should be of the same temperature as the house, and it should be sprinkled either with a fine-rosed pot or a syringe, and when the beds become dry, as they are liable to do in heated houses, it is much better to apply the water lightly at several different times than to give one heavy watering.

Before going further I may as well say a word or two upon the gathering of Mushrooms. Some say they ought to be cut out, while others say they should be pulled or twisted out. I am of opinion that there is very little to be said in favour of the former practice, excepting where the Mushrooms are in such thick clusters as not to be easily separated. Cutting leaves a portion of the stem to decay and breeds diseases among those remaining, as I have proved it does more than once; but when gathering is effected by a quick sudden twist no injury is done to anything, and the small hole that is left ought to be immediately filled up with dry earth.

For the present I will leave this mode of cultivation and take up that in sheds and cellars. I have before remarked that in whatever place Mushrooms are grown the materials for the beds are the same; but there is this difference—there must be more in bulk to make up both for the absence of artificial heat and the fact that a loss of heat will take place owing to the bed being surrounded by cold air, and from sudden changes in temperature. One advantage of sheds and cellars is, that the season of growing the Mushroom is considerably prolonged beyond that attainable in the open air, thereby offering advantages to those who have no better convenience. Beds in these places should be made up in the shape of a triangular ridge, from 5 to 7 feet wide at the bottom, and from 3 to 5 feet high at the ridge; but other forms will do as well, provided the requisite conditions of temperature and protection are secured. The ridge shape, however, offers the advantage of cropping on both sides of the bed, which other shapes do not. In whatever way they are made, the same attention as to firmness and other details must be bestowed upon them as advised for beds in the Mushroom house. After the bed is made-up a thick layer of straw or other protecting material should be put on, in order to keep it at as regular a temperature as possible. After the spawn is working, and afterwards until the Mushrooms show themselves through the soil, the heat of the bed ought to be examined; and if this and the temperature of the surrounding atmosphere be below 45°, a little assistance should be given in the way of a heap of heating material in the centre of the shed; and if the shed is not constructed to close-up, the open space should be closed by other means. Another advantage in having a ridge-shaped bed is that it can be spawned at two different times.

I now come to Mushroom-growing in Cucumber and Melon frames; and this, I may say, is only attempted in the absence of any other convenient plan for growing them under protection. I have grown them very well in such frames after the Cucumbers were done with, by just taking out the soil to a depth sufficient to hold enough heating material to start the spawn, and the after-treatment was precisely similar to that for house culture. By adopting this method much time is saved in collecting material, and a little crop of this kind often comes in useful on an emergency.

As to the open-air beds the season for them is short; but if they are formed of a good size and length, and spawned at two or three different times, Mushrooms will be produced for a considerable period. The first bed may be made-up in April or May, and two or three others, according to their size, during the summer in proper succession. The great difficulty in out-door beds is to maintain an even temperature, and to protect from wet. The one thing needful is a thoroughly good protection, and plenty of it at hand; this must be worked according to the temperature—off or on, thin or thick, as the case may be; and to protect from wet the addition of mats or boards will be necessary to throw it off, otherwise the same rules must be observed and worked out as regularly as for any other mode of cultivation. Market gardeners are in the habit of growing in open-air beds large quantities of Mushrooms, which have the reputation of being superior in flavour to those

grown in houses; and it is reasonable to suppose that such is the case, because they are grown more naturally.

The next method of cultivating Mushrooms which I will just touch upon is that of growing them in boxes, pots, hampers, or any other large vessel that will hold the materials together and bear the pressure of being jammed in firm. Where no better convenience exists for producing Mushrooms in winter these will be found useful contrivances, and may be worked successfully and in conjunction with the beds in the cool sheds to produce gatherings when these beds run short, taking care to put them in dry warm places—in back sheds of the hothouses, or under the stages of such structures, in warm cellars, or any other place where they will be free from cold and damp; from these vessels being easily moveable, they can, if going wrong, be taken to a temperature more suitable to growth.

Wherever Mushrooms are grown it is necessary, in order to insure success, to guard against overheating and too much moisture, either of which in excess would ruin the chances of a crop. Not so if the beds become too dry. The action of the spawn is certainly considerably retarded, but it is not destroyed; for when the necessary warmth and moisture are applied the spawn begins to run, and Mushrooms soon appear. The more compact the beds are made the more regular will be their heat, the stronger and more evenly will the spawn work, the more substantial will be the Mushrooms; and the more they are exposed to the air, consistently with their requirements, the better the flavour will be. When the spawn has once commenced to work in a bed, whether it is in a cellar or any other place, the temperature should never be allowed to fall below 45°; that was the heat of the bed which produced those Mushrooms I brought before you on one or two occasions, and the bed has now been spawned for over six months. The temperature of the room in which they were grown has been allowed to range from 45° to 55°, and when the little Mushrooms showed themselves through the soil on the bed the temperature was advanced a few degrees (but never once exceeded 55°) by placing a heap of heating material on the floor of the room, not having any other means of applying it.—THOMAS RECORD.

[Mr. Record is an excellent authority on Mushroom-culture. The Mushrooms he exhibited at the Royal Horticultural Society on March 18th were the finest we ever saw, and for them he was awarded a first prize in a severe competition.—EDS.]

### ELECTION OF ROSES.

In reply to "E. L. W., Yeovil," I may say that I do not think he will be disappointed in the Roses that came out at the top in the late election. Of course if "E. L. W." expects them to be perfection he will be so, because the best of us, like the Roses, are deficient in some quality. Would, I say for myself, that, like so many of the Roses, it were only in one. "E. L. W." must remember that our friend Mr. Radclyffe does not like and dislike lukewarmly, and so he either clings to a Rose in spite of everyone else—perhaps for the very good and satisfactory reason that the identical Rose responds kindly to his tender watching, or he discards it *in toto* and without any saving clause. There is no possible reason why we should not have our likes and dislikes in Roses; and our friend Mr. Radclyffe dislikes André Dunand; but we are deficient in light Roses, and so I fancy it will be an acquisition, and certainly I have seen it very beautiful. At any rate, it is rather hard to discard a Rose because it comes badly one season. I hazard the opinion that both this Rose and Lyonnais will as a rule be fit for the stand only in their early stages; I am afraid, else, that they will stare the judges out of countenance.

My experience of Edward Morren agrees far more with "E. L. W." than with Mr. Radclyffe. I have seen many such complete failures of this Rose that I sometimes doubt whether I shall succeed with it; but still I hope on, and reflect how often our first impressions of our fellow men are erroneous, and therefore it is hard to judge a Rose at once. I cannot help feeling that "simply miserable" applied to any Roses that have not had a few years' trial on our shores and become pretty fairly established, is rather too sweeping.—JOSEPH HINTON, Warrminster.

### PROTECTING POTATOES.

"H. G. M., Guildford," has no difficulty in replying to the 'LANCASTER AMATEUR'S' two questions on page 282. First, he never "protects them from the weather;" but he has found

that if the frost does come and cut them after they are up it does not do them much harm—in fact, he has found that those which were the most forward suffered the least. Their tops have been blackened, but there have always been green leaves left unhurt lower down. This was notably the case in the great frost on the night of the "Derby-day" three or four years ago, and in the frosts of last spring. Secondly, his Potatoes always are ripe by the 18th of August, and this is the great advantage of early planting. If "LANCASTER AMATEUR" will procure Messrs. Sutton & Sons' Spring Catalogue and Amateur's Guide for 1874 he will find on page 9, amongst the work to be done in February, the following excellent remarks, which exactly bear out what "H. G. M." has been saying:—"Potatoes may be planted in quantity; if the first early growth of haulm is destroyed by frost, it is soon renewed, and in the end the crop is little the worse for it. Potato disease usually breaks out in autumn" [generally in the end of July.—H. G. M.] "and therefore early planting is a safe panacea, for it insures early ripening of the crop, and consequently it is ripe and harvested before the time when the disease occurs," or at any rate the haulm may be cut off, and the Potatoes dug with care. The Potatoes which "H. G. M." grew last year were Ash-leaved Kidneys, Haye's Kidney, Bresse's Peerless, Early Rose, Dalmahoy, and Red-skinned Flourball.

### CURIOUS FORMATION OF GLADIOLUS CORMS.

I SEND you herewith a curious case of bulb-formation in the Gladiolus which I happened to meet with when visiting my friend Mr. Banks at Sholden Lodge, near Deal. He is well known as one of the largest amateur growers of this beautiful autumn flower, and we often chat together over the mishaps and successes we meet with in our cultures. He brought forward this root as an instance of the freaks we meet with. He



had some old bulbs, which he did not plant last season, in an empty flower pot, and on the top of the pot were these two bulbs. It will be seen by the engraving that they have formed, in one instance at least, a perfect corm, without throwing out any roots or having contact with any moisture. I know it is not unusual to see such

things in the Potato and other tubers, but it is, I believe, quite unusual to see so perfectly formed a corm produced under such a condition. It will account for what I have frequently noticed in the planting of spawn. I have been surprised to find that in places where there were gaps, yet when I dug up the ground I found corms larger than the small ones I had planted; and I gather from the example now before me that something of the same kind had gone on underneath the ground, and that a fresh corm had been produced in an abnormal state of things.—D., Deal.

### THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 18.

SOME persons, as I am told, are desirous to set on foot a new plan of treating the pursuit of entomology, and, indeed, the other branches of natural science. While, on the one hand, dry technicalities are to be carefully shunned, on the other hand all twaddle is to be repudiated, and the naturalist, if, indeed, he is still to take that name, is to pursue his particular fancy with the business-like air of the man who plays at billiards or cricket. Now, though I strongly object to sentimentalism, I should be sorry to see a generation of entomologists arise to whom collecting and rearing insects was an employment stripped of all poetic accessories. It is exceedingly doubtful if the man who goes in for the study of Nature, and means to exclude the imaginative altogether, and treat his hobby in a muscular manner, will gain anything by it beyond the simple effect of his being employed. He might almost as well be breaking stones by the roadside, or casting-up interminable sums. And, no doubt, in this age of iron we are all of us much in danger of hardening whatever we touch—we have a Midas-like property, but tending towards a different result. It is gratifying to find, that in the case of horticulture, however, there are many who, though very familiar with the choicest vegetable forms of all lands as displayed in our

gardens, have not lost their sense of the beautiful; and among our entomologists, some at least are still capable of being roused to enthusiasm by the wonders of form and colour.

I have been tempted into these somewhat discursive remarks because before me are some pupa of insects, dark-looking, and almost, it might be said, unsightly objects. I could not but think how difficult it is to conceive how an insect which when it has emerged seems thrice as large as the shell that once contained it, could have been packed in so little compass, and equally strange is it to notice the varied colours displayed by a moth or butterfly only a few hours after it has appeared full-winged, whereas the pupa if cut into shortly before would have shown a structure of a uniform grey or brown. Similar

also on *Galium verum*, also common there. Of late years search for it in that district has proved useless, and the nearest localities to London where the Elephant Hawk turns up appear now to be about Plumstead and Erith in Kent. There are some counties where the insect is plentiful enough, especially towards the south coast, where at twilight the moth, with a penchant for sweets of the best quality, deserts the flowers of the hedgebanks, and whirrs about the garden, or enters the conservatory at evening's dusk; sweeping off, if annoyed, with a hawk-like rapidity, though the moth is not at all elephantine in proportions, that name applying properly to the caterpillar. This insect, which does not vary much as do some, has the fore wings of olive green and pink, with white hairs along the



Fig. 1.—*Charocampa Elpenor*.

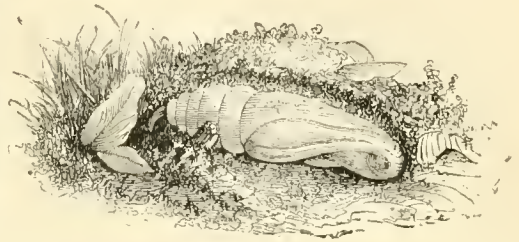


Fig. 3.—Pupa of *Charocampa Elpenor*.

instances the gardener is well acquainted with, seen in the buds of leaves and flowers, only there the transmutation is more gradual. I have known a gardener so much astonished and pleased at the curious sight of the expansion of a moth's wings as to kill no insects for—one day at least! But in truth it is satisfactory to know that a certain number of our horticulturists, consisting of men of all grades, are beginning to take a hearty interest in the doings and appearances of insects, and not merely because they are regarded as enemies or doubtful friends.

A rather favourite moth with young collectors is the large species placed by Linnaeus among his Sphinxes, and called the Elephant Hawk, scientifically *Charocampa Elpenor* (fig. 1, 2, and 3)—not an insect, I believe, as common in England as formerly,

inner edge, the hind wings being of a deeper shade of pink, black at the base. The body is rose colour with bands of green, and the tongue long and spiral, while the eyes, should the moth be seen when engaged upon the flowers, sparkle like lamps in miniature; and through the insects being thus attracted to gardens it comes to pass that the eggs are sometimes deposited on the Vine and the Fuchsia, plants very different indeed, yet both to the taste of the caterpillar of *Elpenor*, so it is asserted; and with regard to the Vine, verified by specimens I have seen taken feeding upon it. Yet it is not by any means sufficiently numerous to be deemed an insect enemy—in fact, the natural food, in Britain at least, is evidently the wild plants named. This rather curious caterpillar has been thought to taper from the middle of its body



Fig. 2.—Larva of *Charocampa Elpenor*.

perhaps because it has some liking for marshy localities—at least in the larval state, and our better drainage has diminished the number of spots where grew the plants, such as the various species of *Epilobium* (Willow-herbs), on which the "Elephants" formerly fattened. Or does this fat and rather showy caterpillar fall frequently a prey to the insatiable sparrows? Years ago worthy old insect-lovers, such as Haworth and Ingpen, used to trudge over to Barnes on a summer evening from the west of London to capture upon that Surrey common the hovering *Elpenor*, which was attracted by the fascination of the flowers of the Ragged Robin. Probably at that time the larva fed freely on the plants still growing on the banks of the Thames not far off, such as the species of *Epilobium* aforesaid, and



Fig. 4.—*Sesiia Apiformis*.

to the head, so as to resemble the trunk of the elephant. To some individuals the creature has a hog-like aspect, hence the Latin name. And in France this and the caterpillars of kindred species are called *Cochonnes*, from the way in which they draw back the two segments of the body next the head. The conspicuous spots on the side of the fourth and fifth segments are so beautiful, being black edged with violet, that they might well give it special distinction among its brethren. Green or brown is the ground colour of the body, the tail being adorned with a short horn pointing backwards. This caterpillar, occurring in August mostly, feeds up much more rapidly in

some seasons than in others; and having completed its cocoon, which is put on the ground, and made very slightly of a few threads of silk mingled with fragments of leaves, it there assumes the chrysalis state, and waits for the approach of spring. A good many, it is likely, die in that stage when the weather is damp, but the survivors come out in May or June.

The moths known to entomologists as the Clearwings form a very singular family. Some species, such as the Currant Clearwing (already figured in these pages), and the Red-belted Clearwing, are too well known to the horticulturist by the mischief done by the larva to the Currant, Pear, and Apple. Differing in size as do these insects, the same circumstance belongs to the external appearance of all—namely, that they resemble other insects, chiefly of the order Hymenoptera. Whether this mimicry is designed for the protection of the species from the attacks of birds and other foes is a question, and various explanations may be devised to account for mimicry in this and similar instances. However, these insects not only resemble hornets, bees, and flies in appearance, but also in habit, being invariably on the wing in the bright sunshine, and when resting on the leaves and stems of plants they move about with an elegance and quickness unusual among the Lepidopterous insects. The two Hornet Clearwings (*S. Bembeciformis* and *Apiformis*), if reposing on tree trunks will move the abdomen up and down quite in the manner of a wasp or hornet, as pointed out by Mr. Wood. The latter (fig. 4), is perhaps the commoner visitant to gardens, appearing there in June; and should one of them be caught by the hand, the soft feel of the moth plumage at once distinguishes it from the hard-cased hornet. But probably it is the wiser thing not to seize one in this way lest a Tartar be caught—i.e., a hornet by mistake, though the virulence of the sting of the latter insect has been much exaggerated. These Clearwings have an artful trick of suddenly dropping and not flying up should a net approach them when they are settled, so the best plan to take them is to strike from below. The wings in this species expand nearly  $1\frac{1}{2}$  inch, being transparent like those of bees, only having an edging of brown; the thorax is also brown, with two bright patches of yellow; the head and body are of that colour, only the latter has also two brown belts; the legs are reddish. Though the caterpillar is an internal feeder, this moth can scarcely be said to be an injurious species, the numbers not being large, and the caterpillar affecting the Aspen and Poplar, but rarely or never killing the trees unless they are previously in an unhealthy state. This pale, rather grub-like larva is also rather different from those of the Lepidoptera we best know, but they have the usual array of legs, though not very visible, and also small hooks on the segments, by which they wriggle themselves up and down the galleries they have mined. Many an entomologist is working away just now, cutting the stumps of the Willow, Poplar, and Alder, for this and the allied species are now to be found in the chrysalis state awaiting emergence; and not unfrequently the searcher is disappointed through the fancy some of the caterpillars have for leaving their wooden abode and spinning a cocoon on the ground some distance off.

To the Lilac, on the verge of coming into blossom this spring month, has been given the honour of providing half the name of one of the most beautiful of British moths, though but of moderate size. This insect is a garden species in all its stages, and through May and June the larva is to be found feeding on the Elder, Privet, and especially the Lilac; or it may begin to feed at an earlier date, as it lives through the winter. The Lilac Beauty (*Pericallia syringaria*), displays a variety of tints which cannot well be explained in words, nor would an uncoloured figure be of much help to one who has never seen it. Suffice it to say, that the general colour of the wings is a pearly grey, clouded over here and there with red and yellow, while on the ground there are arranged various patches and lines of white, yellow, and brown. The head and thorax are brown, and the antennae feathered. On the wing in July, the moth seems as if it were affected by the heat of the season, for it keeps very quiet during the day, and hence often escapes from the eager insect-hunter seeking such prizes, and at night it takes no heed of the sugary bait that beguiles some. Should the horticulturist find amongst "the common herd" the caterpillar of the Lilac Beauty, he might know it from the rest by its peculiar aspect. The body, which is grey or tinged with rose colour, has six warts or processes on the back placed in twos, the last pair being larger than the rest and curved backward; also sprinkled over the body there are a number of whitish points. The chrysalis is placed in a cocoon attached

to a leaf, and the moth comes out in about three weeks after.—J. R. S. C.

## PROXY-VOTING AT THE ROYAL HORTICULTURAL SOCIETY.

THE question of voting by proxy at the Royal Horticultural Society is again to be raised, and in accordance with a declaration made by the President at the last annual meeting, a special meeting is to be called to submit the question to the Fellows.

We have heard so much lately about the advantages and the disadvantages accruing from the exercise of the privilege of proxy-voting, we think this is the time for deliberately weighing these and endeavouring to come to a rational solution of the question. What strikes us in the first instance is, why the Fellows of the Royal Horticultural Society should ask to possess a privilege which no other society possesses. There are many older and as important societies as this, in which questions of great moment have been and are discussed, the Fellows of which have never even mooted the question, and surely it is reasonable to suppose that if any advantage arose from the exercise of such a privilege it would long ago have been discovered. It is a remarkable fact, that it is only since the distressing squabbles and contentions between the Royal Horticultural Society and the Royal Commissioners have eropped-up, that anybody thought it worth while to ask for a power which may any day be used for or against the object it was intended to serve. There is no security to either party, and there is no permanent power obtained by the establishment of proxy-voting; but there is a manifest and dangerous wrong which may be and is inflicted where proxy-voting exists. There were instances of it in the late meetings of the Royal Horticultural Society, where the privilege is restricted to the lady Fellows. Not a tithe of the lady Fellows, any more than a great majority of the Fellows generally, understood the merits of the questions which were so agitating the Society. They were applied to in urgent terms by representatives of the rival parties to entrust their proxies to them, and, without even the nature of the contention being explained to them, they sent the proxies as requested, in many cases, as we know, without knowing how they were to be used. In this way a hundred or two of proxies were placed in the hands of a single individual, enabling him to vote just as he pleased. This is a power which ought not to be permitted to exist.

Instead of extending the privilege it ought to be abolished altogether, even in the case of ladies, who are as free to exercise their privilege at the meetings as gentlemen are, and who do exercise it very freely when the questions under discussion are of sufficient interest to secure their presence. There are well-known instances in which the lady Fellows have exercised this privilege rather too freely. At some of the recent meetings, after having given their proxies to gentlemen to exercise the privilege of voting for them, they have been present and voted personally as well—an abuse of privilege and power which we can only account for by believing it was done through ignorance.

A great deal has been said about the deprivation it is to country Fellows not being able to vote on questions that agitate the Society, without they have the privilege of voting by proxy. From our knowledge of country Fellows, who, we are sorry to say, are not nearly so numerous as they were formerly, there are very few of them who take much interest in those questions which are not purely horticultural that have agitated the Society in these latter days; and for those of them who do take an interest in them, the mere expense of a return ticket by railway to give their vote is as nothing to the expense and time that Fellows in and around the metropolis expend on the affairs of the Society. It rarely happens that a country Fellow need make a visit to London exclusively to exercise his privilege of voting on some important question affecting the interests of the Society, when he may not also at the same time do something for his own interest as well. We know some people who make it an excuse to come to town "to get their hair cut," an operation which may very well be performed in a country town for a small charge; but the hair-cutting is only a mild form of saying they have gone on a holiday.

No doubt there are individual cases in which, from various causes, it may be a hardship for a Fellow to come to town to exercise his privilege of voting; but there is no rule and no law which equally suits everybody, and so in this, as in all

other cases, the interests of the few must yield to those of the majority.

We trust that the good sense of the Fellows will not only check the further increase of proxy-voting, but take timely steps to abolish it altogether.

### ORCHARD HOUSES—PRIMULA NIVEA.

AFTER gathering the fruit I have hitherto placed potted Peach trees in the open air until the end of September. The advantages are more room in the houses, freedom from red spider, and the power of keeping the atmosphere within sufficiently dry to enable the later fruit to ripen off with good flavour. But I have often had reason to complain of the unhealthy look of the trees when they broke in spring. Buds which were plump enough in autumn shrivelled and fell off. The leaves were often sickly, though, as the summer advanced, they regained their health. I thought these defects arose either from the autumn dressing, or from the roots getting dry in winter. Experiment, however, has shown that neither of these is the true cause, and I am led to believe that the wood is imperfectly ripened in consequence of exposure to the open air so late in the year. Last summer I housed the trees earlier—namely, the first week in September, but the summer was not a genial one, and the present state of my trees is such, that if it were not for the following circumstances I should doubt as to the real cause of their sickly look. But I have a tree of a scarce and favourite sort, Abel's Malta, a seedling from the old Malta, and, like its parent, a very shy bearer. Last year, in order to encourage it, I kept it entirely under glass. It has rewarded me by breaking well and setting a fair crop. Hence I infer that if trees are placed out of doors they ought to be housed before the 1st of September. I may remark that trees which were started in heat in February, 1873, and had plenty of warmth up to June, though turned out of doors with the rest, have generally broken well, and show a good crop.

I wish that any of your readers who has had success with *Primula nivea*, generally misnamed *nivalis*, would communicate his mode of culture. I treat mine just as an Auricula, but though it lives it does not flourish. Elsewhere I see it in the same state. There used, however, to be an old nurseryman in this neighbourhood with whom the plant grew very vigorously in pots under glass, but it does not succeed with his son: so if he had any secret it has died with him.—G. S.

### FOUNTAIN'S VINERY AT BLENHEIM.

An article in the Journal upon the gardens at Blenheim Palace mentions the vinery erected there upon my principle, which, by-the-by, is erroneously called an orchard house. It states that in a portion of the house trees are planted out, and "involve much less labour in watering." If this is stated seriously as a fact, I fear the principle on which and for which the house was erected is not clearly understood. The trees ought to be out of the house through the summer months almost entirely, and exposed to the rains and dew both day and night. Under such circumstances it is impossible they should require more watering than trees kept entirely under the cover of the house; indeed, in wet seasons they require very little watering at all, and should, especially at the full ripening period, be placed in the house to avoid too much moisture. This house is erected, not for forcing, but as a cold autumn vinery, and constructed so that the principle of the moving trees may be applied to it, and the centre of the house (all but useless in an ordinary vinery) utilised for growing stone fruit, which, from the facility of placing it in the open air, is very superior to that grown in a common orchard house. Peach trees planted as fixtures in this house may, close to the ventilating lights in front, produce a small proportion of fairly-good fruit; but I do not hesitate to say that the fruit from trees if so placed in the centre of the house would not be worth gathering, especially if there are a certain number of Vines, as intended, upon the close-spur system overhead. Hot-water pipes are necessary for frost in spring, and to keep the Grapes dry in wet autumns.

I subjoin the official report of 1873 sent to me in the winter from the Royal Horticultural Gardens at Chiswick, where a house exactly similar to the one at Blenheim was erected to test the system with all the other houses in the gardens; one of these is a splendid orchard house filled with trees both planted out

and in pots. Of course the house is managed on my principle, but I believe the hot-water pipes are not yet added, as the Society had so many great expenses to contend with. The whole report is as follows:—"We did not have a very fine crop of Peaches anywhere this season. Those treated after your principle were, without doubt, the highest-flavoured. The Grapes, especially the Madresfield Court, in your house have been superb, and have won the admiration of everyone." A gentleman in the south of England, for whom a larger house than the one at Blenheim was erected, writes to me that he is more than ever pleased with the house, and that he had taken the first prizes both for Peaches and Grapes at some very large exhibitions. Under these circumstances I venture to think there must be some misapprehension of the object and management of the principle at Blenheim.—JOHN FOUNTAINE, *Southacre Rectory, Brandon.*

### MR. WILLIAM PAUL'S ROSE MANURE.

THIS manure was brought under my notice in the spring of 1872, and having, by the kindness of Mr. W. Paul, received a sample for trial, I am glad to be able to pronounce it a boon to amateur Rose-growers, and especially to those who, like myself, have to grow Roses in a soil anything but favourable to the well-being of the plants or the perfection of the flowers. Judging from the result of the trial during one season only, I have confidence notwithstanding that by a simple and inexpensive process—that is, according to the directions supplied to those who use, or will use, this manure, a vast amount of trouble will be saved, and not an inconsiderable degree of disappointment avoided. The mode of procedure is plain and easy.

In a plantation of Roses on the Manetti stock, the rows being about 2 feet apart, with an interval of 20 inches between the plants, I selected a single average row for experiment. After the spring pruning, and as the plants were starting into growth, I scattered the manure around the plants to half the distance, both sides, to the next rows, afterwards loosening the soil with the points of the prongs of a small spud. The flowers produced by this row were good and abundant, full, of correct form, with petals firm and well coloured; on the whole decidedly better than the generality of the flowers in the remainder of the plantation; at the same time vigorous growth began to manifest itself in most of the plants of the row. Towards the end of July a second dressing of the manure was applied in the same manner, and by the end of the growing season the plants had acquired a strong and healthy appearance, with shoots varying from 3 to 5 and 6 feet long. These shoots produced excellent flowers in the following season—that is, in the summer of last year.—ADOLPHUS H. KENT, *Bletchingley, Surrey.*

### A MAMMOTH ROSE BUSH.

A MAMMOTH Rose bush, the largest we think in the United States, adorns the cottage of one of our correspondents, Mr. S. A. Rendall, Santa Rosa, California.

From the description forwarded to us we take the following facts:—It was planted in 1858, and is of the Lamarque variety, well known as one of the most beautiful of the white-coloured sorts. It has grown during the past fifteen years from a small slender bush with astonishing vigour, just as all Roses do in the wonderful air and sunshine of the Pacific coast, until it has clambered over the window and covered the very roof to the summit. Imagine a huge garland, or rather mountain of Roses, 25 feet in height, 22 feet across, splendidly developed, blossoming over a surface of 400 square feet, and having upon it at one time no less than 4000 full-blown Roses and 20,000 buds.

The stem near the ground measures 24 inches in circumference. Just above the ground it separates into three principal stems that grow over 12 feet to the cottage eaves without lateral branches. These main stems pass between the eaves and a strong support attached to the house.—(*American Horticulturist.*)

### THE WALNUT TREE.

"It's of no use for you to plant a Walnut tree, sir." "Why, Perkins?" "Because it won't bear for twenty years, sir." "Then let one be planted now, for there is no time to be lost, as I am fifty." This conversation took place, and the master's

determination was sound, for he lived to be eighty, and ate of the fruit of the tree for more than fifteen years.

I have always had a kindliness towards the Walnut tree during my whole life. I used in childhood to make boats of the shells of the nuts. I have always liked the flavour of Walnut ketchup. A trial of skill was in our nursery who could peel a Walnut without breaking it, and so have what we called "a whole goose." My fowling-pieces are all walnut-stocked. There was a time when I sauntered in "Walnut-tree Walk," between the Fulham Road and Earl's Court, but the building

Goths have swept nearly all the trees away, and with grim irony they call the place "Redcliffe Gardens"—why, there's not a garden left! I wish that it were otherwise, for I am an old man now, and when an aged tree, known to me from boyhood, is destroyed, I feel that an old friend is taken from me. Why there was that aged Walnut in Hogarth's garden, I find it was cut down some thirty years since, and sold for £70; and in 1812 forty-four celebrated Walnut trees, at the Nut Holt, in Ely, were sold by auction for £1028. Then at North End, Fulham, there was "Walnut-tree Cottage," but it has been destroyed, and so has the noble old tree which was in its forecourt, and entitled it to the name. Beneath that tree Edmund Kean the tragedian, and John Singleton Copley the artist, and father to Lord Lyndhurst, passed many years. All these were old friends, and all were profitable friends. This is still appreciated on the Continent, though more so formerly; for in some parts of Germany, Evelyn tells

us, no young farmer was permitted to marry unless he produced evidence that he had planted and was proprietor of a certain number of Walnut trees. This, added Evelyn, "is for the extraordinary benefit which the tree affords the inhabitants."

Whilst writing these notes, an inquisitive friend intrudes the question—"Why was it called the Walnut?" "Not because of its hard shell, but because of this (and I pushed Lyte's Herbal to the querist)—"The fruit is call Walnuttes, Walahe Nuttea, and of some Frenche Nuttes." "That does not explain." "Yes, it does; the tree came to us from France—Gallia, and thence the fruit was called Gall nuts, and thence varied to Wall nuts, just as Gallia became Wallia, and is now Wales." This, however, is doubtful, for Wealh-hnutt, Anglo-Saxon for "foreign nut," may be the origin.

Not a part of the Walnut tree but is useful. An infusion of the leaves is specific in some eruptive disorders, and if placed among clothes put the moth to flight; the sap is rich in sugar,

and it has been profitably manufactured from it; the nuts yield an oil not liable to congeal, and is consequently used by artists, and for the wheel-work of clocks and watches. Those nuts are produced in large quantities in the Walnut's native countries—Persia, Cashmere, and other regions near the Himalayah, whence they are exported and are an article of food in India, as they are in southern Europe, being eaten fresh. The cake, after the oil has been expressed, is used as a food for cattle and poultry. The wood of the roots is finely veined, and is in request for inlaying by the cabinet-makers; the

roots, as well as the husks, also furnish a dye, used for staining light-coloured woods. The Walnut tree in full leaf is also the cook's adjutant, for I know a family who hung joints of mutton in it to promote their fitness for the spit. Do not pooh-pooh that practice, for if you turn to one of your own books you will see that leaves do emit gases, which tend to soften muscular fibre. On page 184 of "The Science and Practice of Gardening" is this paragraph, to which I refer:—"When plants grow in a soil containing much common salt (chloride of sodium) or other chlorides, Sprengel and Meyen observed them to evolve chlorine gas from their leaves. This takes place, however, more during the night than during the day. Some plants also give off ammonia, while others (Cruciferae) emit from their leaves pure nitrogen gas (Daubeny's *Three Lectures on Agri.*, p. 59). This emission of nitrogen from the leaves is, according to Schultz, not an uncommon occurrence, and on a dark day may amount

to nearly two-fifths of the entire bulk of the gas given off."

Lastly, the Walnut can be advantageously turned to account in landscape gardening. A row of old trees were so used in a place in Devon. They had been planted, or had been thinned, to about 200 feet apart, and behind them was a plantation of Beech and other dark-foliaged trees, so that the pale-leaved Walnut trees seemed to be at the prominent points of deep recesses. Those Walnut trees were never allowed to have their nuts thrashed off, not only because any injury of the young shoots was wished to be avoided, but because, as the owner said jocularly, "there's not a word of truth (I have proved it) in those lines:—

"A woman, a spaniel, and a Walnut tree,  
The better are the better thrashed they be."

As early as the time of Virgil the cultivators of the soil enter,



tained the opinion that if the Walnut flowers were abundant the following corn-harvest would be excellent.

For the accompanying illustration we are indebted to Messrs. Cassell's edition of Figuiet's "Vegetable World."—E.DS.]

### EXHIBITING HYACINTHS.

At the metropolitan exhibitions during the last three or four years certain exhibitors have made a practice of tying two separate Hyacinth spikes together, so that they should have the appearance of one spike only; and in order to accomplish this it is sometimes necessary to cut off a large portion of the bells on the two sides that are fitted together. The question has arisen amongst growers, whether it is right to manipulate the spikes in this way. The advocates for the system say that, according to the wording of the schedules, they are perfectly justified in doing so; that one bulb in a pot is what is demanded, and that you ought to get all out of the bulb you possibly can. I have protested against this way of exhibiting the Hyacinth, and there is one very great objection to it which I think ought not to be overlooked, and that is the fact that a large number of persons who visit the exhibitions go there to take notes of the best flowers with a view to purchasing them for their own gardens. Now let us notice a collection of Hyacinths. It contains a certain number of pots, each with one plant and apparently a single spike in each. The would-be purchaser takes his notes accordingly, and is perfectly innocent of the fact that the noble spikes he has been admiring and which are such as he hopes to see in his own garden next year are not *bona fide* but only a make-up. It does seem like deceiving the public, although I believe those who are in the habit of manipulating their Hyacinths in this way would scorn the idea of doing anything of the kind. Another objection is that where dressing is allowed other evils will creep in, and what holds good in the case of the Hyacinth will be applied to other flowers. Take the Auricle for instance: when two trusses, as they sometimes do, come out of the same crown, why not tie them together and make one immense truss? There is nothing in the schedule of the Royal Horticultural Society to prevent this from being done; but if an old florist were sent to adjudicate on them it would certainly be a case of disqualification.

It seems to me that the schedules of the metropolitan societies might be compiled with more care, and that some sort of instructions should be given for would-be exhibitors. In the schedule being issued by the Metropolitan Floral Society the following rule applies to Auriculas:—"No plant to have more than one truss, and no truss less than five pips." This settles the matter at once, and a new grower knows what to prepare without any further trouble. A similar rule should be inserted in the schedule of the Royal Horticultural Society. As an exhibitor of Hyacinths I would also strongly urge the desirability of confining the exhibitors to one spike on each plant. Tulips are shown three plants in each pot, and the old growers know this; but should a new grower wish to exhibit, neither the Royal Botanic Society's schedule nor that of the Royal Horticultural Society gives any information. In the case of the latter it was, I believe, an accidental omission, but in this, as in many other matters, exhibitors want more definite rules for their guidance.—J. DOUGLAS.

### THE MIDLAND FARMERS' CLUB.

At the tenth annual meeting, held at the Great Western Hotel, Birmingham, on February 5th, Mr. E. W. Badger, F.R.H.S., read an essay "on Potatoes." He began by assuring his hearers, "I have no new discoveries to announce respecting Potatoes. The task I have undertaken is to place before you, as plainly and briefly as I can, what is known about this important vegetable, giving an account of whence we obtained it, its cultivation, a description of some of the best varieties, and an account of the murrain or Potato disease, with the results of which I am afraid all of you are very familiar."

Fully and ably Mr. Badger has done all that he purposed. The essay occupies sixteen pages, and we recommend it to our readers. We will make but one extract.

"Should the sets be whole or cut, and what is the best size? Mr. Maw, of Benthall Hall, published the result of his elaborate experiments in the Journal of the Royal Agricultural Society for 1867: I may briefly put that result in the following quotation:—"Of the whole series of thirty-nine experiments

twenty-five were in favour of large sets, and fourteen showed an opposite tendency; but the proportion borne between these numbers does not fully represent the actual result, which is more fairly stated by the weights of the balances on either side; for whilst the gains on the twenty-five (acres) experiments, calculated per acre, amounted to 94 tons 3 cwt. 1 qr. 6½ lbs. in favour of large sets, the gain (fourteen acres) on the fourteen experiments favourable to the smaller sets amounted to only 34 tons 17 cwt. 1 qr. 27½ lbs., leaving (after setting the gains against the losses) an average net balance on the thirty-nine comparisons of more than 1 ton 10 cwt. in favour of the larger sets on each advance—namely, from 1 oz. to 2 ozs., from 2 ozs. to 4 ozs., from 4 ozs. to 6 ozs., and from 6 ozs. to 8 ozs. . . . Every increase in the size of the set from 1 oz. up to 8 ozs. in weight produces an increase in the crop much greater than the additional weight of the set planted.' . . . Further, 'weight for weight, cut sets produce, as nearly as possible, the same weight per acre as whole Potatoes.'"

### NOTES AND GLEANINGS.

WE are very glad to hear (says *Nature*) that negotiations are pending for the transfer of the valuable MUSEUM OF NATURAL HISTORY, which was formerly in the possession of the EAST INDIA COMPANY, from the India House, where it has been for some time stored, to South Kensington, where it will at last be available for reference and study.

— BICTON HOUSE, the seat of Lady Rolle, near Budleigh Salterton, Devon, had a narrow escape from destruction by fire on the 30th of last month. Its gardening whilst superintended by Mr. Barnes and Mr. Begbie was frequently commended to the notice of our readers, and we rejoice to find that its conservatory and orangery have been but little injured. The exertions of the steward and domestics were most praiseworthy, and but for them the loss, instead of £6000, might have been more than ten times that amount.

— THE SYNDICS of the CAMBRIDGE BOTANIC GARDEN in their annual report state that the Curator has nearly completed the re-arrangement of the herbaceous plants, and it is hoped the laborious task will be finished in the ensuing year. The plant houses are in a good state of repair, but overcrowded. The Professor and Curator are unable to see in what manner the number of plants kept in them can be materially reduced without injuring the efficiency of the garden. Several of the finest and most valuable specimen plants now threaten to grow through the roofs of the houses. The Syndics acknowledge some donations of foreign seeds and plants, but they are under the necessity of discouraging gifts of seeds of plants belonging to warmer regions, because of the want of room for their proper cultivation.—(*Nature*.)

— AN INTERNATIONAL HORTICULTURAL SHOW is to be held at FLORENCE in May, from the 11th to the 25th. The Société Royale Toscane d'Horticulture offers 100 medals of gold, 221 of silver, and 131 of bronze, and five grand *prix d'honneur* are offered respectively by the King of Italy, the Minister of Agriculture and Commerce, the province of Florence, the town of Florence, and the lady patronesses. Prince Demidoff and Professor Parlato have also placed gold medals for special classes at the disposal of the Committee. Coincidentally with the Show the International Botanical Congress will be held at Florence under the presidency of Professor Parlato. The programme of subjects for discussion includes questions on the nature and functions of hairs on plants, on cell-circulation, on the latex, on the autonomic movement of the leaves of plants, on the causes which determine the direction of the root in the germination of a seed, on the causes which influence the direction of the growth of branches, especially of weeping trees, on the analysis of the organs of reproduction between cryptogams and phanerogams, as well as many other subjects more widely known, and subjects of debate such as the origin of Bacteria, the determination of fossil plants by their leaves, the distinction between species, race, and variety, and the origin of insular and alpine floras. The President and Secretaries of the Société Royale Toscane d'Horticulture announce their readiness to communicate with any botanists who wish for further information with a view to attending the Congress. The official language of the Congress will be Italian, but papers may be communicated and discussions conducted in any language. Representatives to the Congress have been appointed from the various countries of Europe, and from

Egypt, Australia, Mexico, Brazil, &c. Among the names of those who are expected are announced the following English botanists:—Messrs. Hooker, Trimen, Ball, Hiern, Hogg, Maw, Murray, Allmann, and Binney. As a measure of precaution against the introduction of the *Phylloxera*, the importation of Vines and of other fruit trees into Italy has been rigorously prohibited since October 31st last.—(*Nature*.)

## NOTES UPON FERNS.—No. 8.

### GLEICHENIA.

I SHALL now conclude my remarks upon this beautiful genus, taking up the species belonging to the second group—*Mertensia*. Before commencing, however, I must reply to the remarks of your correspondent Mr. Shuttleworth, and which I should have done sooner had not severe illness quite precluded me from continuing my contributions to the Journal. In the first place, then, as Mr. Shuttleworth has given me a public invitation to inspect his collection I beg to publicly accept it, and hope to avail myself of the offer during the coming season; at the same time I may add that I am no stranger either to him or his *Gleichenias*, and am quite willing to admit his specimens of these superb Ferns are very fine. Nevertheless, the majority of the kinds he possesses were grown into nearly as fine specimens under my care before Mr. Shuttleworth began their culture; and I would now just briefly glance at the differences of our opinions upon this subject, which are indeed both few and trivial.

I have found *Gleichenias* grow well with me in a mixture of rough peat, silver sand, and light sandy loam, as I before mentioned. Mr. Shuttleworth says loam, silver sand, and leaf mould. I do not deny it: there is little difference in the two mixtures, and our readers will have the opportunity of the two experiences to prosecute their labours to a successful issue. Mr. Shuttleworth says *G. rupestris* is not a cool-house Fern, that he grows it in a warm greenhouse. Now, my idea of a cool (not cold) fernery and a warm greenhouse is very similar, but I quite agree with him that *Gleichenias*, like many other exotics that thrive with us in the cool house, are benefited in spring by a little extra warmth, especially about this season; and as *G. rupestris* is found in the same districts as *G. microphylla*, there should be no reason for giving it a very different treatment under cultivation. Mr. Shuttleworth is quite right in presuming I refer to *G. circinata glauca* under the name of *microphylla glauca*. The name *microphylla* was bestowed upon this plant by the veteran Brown, a plant which he would appear to have found abundant about Tasmania and Port Jackson. This is supposed to be the same as *G. circinata*, *Nr.*; but in my enumeration I prefer the name of Brown, and thus the seeming discrepancies in names will be explained.

### MERTENSIA GROUP.

*GLEICHENIA FLABELLATA*.—This is a fast-growing and magnificent species, thriving admirably in the cool fernery. The stipes are erect, in fine specimens between 5 and 6 feet high, bearing spreading whorls of fan-shaped fronds, the segments of which are pinnate and decurrent; colour, bright green. Its rhizomes spread rapidly, and it therefore will require good surface room. It is usually considered a native of Australia and New Zealand; it is, however, also found in New Caledonia, and I recently received specimens of the same species from North Queensland. Plants from these localities will probably require a little extra warmth.

*G. CUNNINGHAMII*.—An extremely rare plant, indeed I cannot name any collection where a specimen plant is to be found; one small plant is all that ever came under my care. In general style it resembles *G. flabellata*, but it is abundantly distinct. It is erect in habit, rigid, and coriaceous in texture. My native specimens are nearly 3 feet high; the stipes and young fronds abundantly clothed with large dark brown chaffy scales. The spreading fan-shaped fronds are dichotomously divided and upwards of a foot in diameter; segments 8 inches long and deeply pinnatifid, very deep green above, and beautifully glaucous beneath. It is much to be regretted that this grand species is not more plentiful. Native of New Zealand.

*G. DICHOTOMA*.—This is a favourite species of mine, and I have had specimens of it between 4 and 5 feet high, and more in diameter. The creeping rhizomes are thin and wiry. The fronds are several times dichotomously forked; the pinnae are broad lanceolate, acuminate, and deeply pinnatifid, bright shining green above and glaucous below. It is found in

nearly every part of the tropical world, and, as may be imagined, varies considerably from different localities. It requires stove treatment.

*G. PECTINATA*.—A rare and handsome stove species, somewhat resembling *G. dichotoma*, yet so distinct in its habit of growth as to render it impossible to confound the two. The fronds are branched, each branch consisting of a pair of pinnae, some 9 inches long and nearly 3 inches broad; they are lanceolate acuminate and deeply pinnatifid, the segments being linear obtuse and emarginate, bright shining green on the upper side, and nearly as white as a silver *Gymnogramma* below. Native of the West-Indies.

*G. PUBESCENS*.—This is a truly beautiful species which requires the temperature of the warm house, and one which dislikes to be syringed, perhaps more than any other I have had to deal with. The fronds are much forked, the branches being deeply pinnatifid, from 10 to 12 inches long, and from 1½ to 2 inches broad, dark green above, but below clothed with a dense covering of rusty cobwebby hairs, through which the sori protrude. It is, unfortunately, still very rare. Native of various parts of tropical America and the West Indies.

*G. FURCATA*.—A very rare stove species, resembling somewhat the last named; indeed, more than once I have seen *G. pubescens* grown under this name, but *G. furcata* may be distinguished from the latter by the nearly total absence of the ferruginous hairs which clothe the under side of *G. pubescens*. The fronds are much branched; pinnae some 9 inches or more in length, linear, and deeply pinnatifid, dark green on the upper side, but slightly hairy or nearly glabrous below. Native of the West Indies.

A few words now upon some other species which are still  *desiderata* in our collections, and which any of your readers having friends or relatives abroad in their native habitats should endeavour to introduce.

*G. LONGIPINNATA*.—I once received this species in a living state from Trinidad, but it is now dead, and the plant, I am informed, has been burnt out of that by an immense fire, which destroyed not only the plants but actually burnt the soil to a considerable depth; it is also a native of Surinam. It is a bold-growing plant, the branches of which are said to attain a length of between 2 and 3 feet.

*G. GIGANTEA*.—A magnificent bold-growing species which, as far as I am aware, has never been introduced in a living state. It is found in Assam and Nepal.

*G. NERVOSA*.—A fine and beautiful Fern, found at St. Catherine's, Brazil.

*G. REVOLUTA*.—This will probably prove to be a cool-house species, as it is found at considerable elevations on the Andes of Quito.

*G. CRYPTOCARPA*.—I am not aware if this species is now alive or not in our Fern collections; it has been introduced, but I am afraid now lost. It is a cool-house Fern from Peru and Chiloe.

*G. GLAUCA*.—This, I am of opinion, is alive in this country. It is a beautiful Fern from Japan.

*G. BIFURCATA*.—By some this is only considered a variety, but, if so, it is very beautiful, and would be very distinct under cultivation. Native of Java.

*G. BANCROFTII*.—This also labours under the same doubts as the preceding, and is thought to be a variety only by some authorities upon these plants; but species or varieties, the whole of the kinds here enumerated would be grand additions to our Fern collections.—*ESPERTO CREDE*.

## ANEMONE CULTURE.

THIS beautiful genus of the order Ranunculaceae, like its ally the Ranunculus, has for ages been in great favour, and its cultivation a pleasant pastime, with florists. There were in the earlier periods of horticulture two species of *Anemone* grown in quantity—the one, *A. corenaria*, a native of the Levant, which was introduced into England in 1596; the other, *A. hortensis*, said to be indigenous to Italy, was introduced a year later. The first is distinguished from, and superior to, the last by its splendid double Poppy-like crowned flower, and the great diversity of colours and shades of colours it embraces have combined to keep it in high estimation. *A. hortensis*, or the Star Anemone, as may be supposed from the length of time it has held its own, does not lack good qualities either.

While discussing the proper method to adopt in the cultivation of these pets of the ancients, we shall more particularly

make *A. coronaria* the subject of our remarks; and shall first consider their cultivation from seed. The seed of the *Anemone* should be gathered from time to time as it approaches maturity. The earliest blossoms will be the first to ripen, which, if left until the body of the others ripen, would be scattered by the winds. It is preferable to sow the seed immediately after being gathered, pursuing the same plan as has been described in our paper on the *Ranunculus*, and treating in every respect the same. The downy nature of the seeds of the *Anemone* renders their separation difficult, and therefore it is not easy to scatter the seeds equally over the bed; so, in some degree to effect a separation, it is necessary to rub up a portion of sand with the seeds before attempting to sow them. In choosing plants from which to gather the seed, semi-double varieties that are the most brilliant in colour, with vigorous erect stems, are to be preferred, as there is a greater probability of procuring a good offspring from them than from those of weakly growth and dull or run colours.

**Propagation by Division of the Roots.**—To effect this it is only required of the cultivator to select those varieties he means to perpetuate and multiply, and divide them into as many parts as there are crown buds with a knife with a keen edge, being careful to make as small wounds as possible.

**Situation and Soil.**—A similar soil and situation should be allotted them as has been recommended for *Ranunculuses*. Although the *Anemone* will prosper in a somewhat poorer compost than *Ranunculuses*, it will be all to their advantage to have it well enriched; and in order to have a lengthened succession of bloom, it is advisable to plant at three different periods throughout the autumn and winter. The first plantation may take place in the middle of October; and of the two succeeding ones, a month later for the next, and the third in January. On all occasions see that the ground is in comfortable-looking order; give the same distance between plants, and the same method of bed-preparation; indeed, with few exceptions, they may be treated as directed for *Ranunculuses*. Should winter set in severe before the roots have started, there will be danger from their inactivity of injury from frost. Guard against this circumstance by means of a covering of mats or other protection.

**Lifting-up and Storing the Roots.**—The *Anemone* is not subject to suffer to the same extent as the *Ranunculus* while in that semi-inactive state that succeeds the flowering, but will in some seasons retain a freshness in the foliage for a considerable time after seeding. But this state of things arises from superfluity of moisture accompanied with heat. So, to accelerate the ripening process, covers ought to be applied to ward-off rain, but placed sufficiently high above the bed not to interrupt the free action of the air amongst the plants. When the foliage assumes generally a yellow withered look, prepare to have them lifted, and be very careful in the process to prevent the roots being broken, while at the same time as much of the fibres and adhering soil as possible ought to be separated from them. All their subsequent demands on attention until planting-time returns is to keep mould from laying hold on any broken portions of the roots; and in all other respects care for them is as necessary as for the preservation of *Ranunculuses*.

**Selection of Sorts—Doubles.**—Admiral Zoutman, very double, highly commended; Azure Incomparable, dense blue; Bleu Celeste, fine; Couleur de Sang, brilliant scarlet; Feu Superbe, dazzling red, extra full flower; Grandeur à Merveille, rosy-white, superior; Reine des Pays-Bas, rose and white; Rose Surpassante, white, with streaks of red, fine; Bleu Aimable, blue, bordered white; Coronation, rose; Cramoisie, splendid crimson, great bloomer; Emperor Alexander, crimson and white, fine, superb scarlet; Fire King, blazing scarlet; Ivanhoe, white, extra; L'Oracle du Siècle, scarlet and white stripe, fine; Lord Nelson, deep violet; Miss Kitty, rose-red; Queen Adelaide, light purple, fine large flower; Solfaterre, orange-red and purple, striped irregularly; Sophia, scarlet and purple; and Victoria Regina, dense red, extra fine.

For distributing in flower borders and shrubberies, many of the single kinds of *Anemones* are eminently suitable, some displaying their abundantly-produced flowers in the spring months, others in summer, and again, others in autumn and winter. For instance, *A. japonica* flowered profusely in a cool house over the dead of winter. Both the kinds known as *japonica alba* and *japonica elegans* succeed well in pots, as well as others. There exists a splendid assortment also of the old *hortensis*, both single and double; and too many of either class cannot be planted in mixed borders; and they are like-

wise very effective in the flower garden proper, either in masses or isolated.—A. KEER (in *The Gardener*).

## PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

*COLCHICUM PARKINSONI.* *Nat. ord.*, Melanthaceæ. *Linn.*, Hexandria Trigynia.—Native of the Grecian Archipelago. "This charming Meadow Saffron appears to have been actually lost sight of by botanists for nearly two and a half centuries. It is originally very accurately described and rudely figured by Parkinson, in the '*Paradisus Terrestris*,' published in 1629, where it is distinguished from the other tessellated-flowered *Colchicums* by its smaller size, brighter, clearer colouring, and the undulated leaves lying flat on and appressed to the ground.

"Ray, in his '*Historia Plantarum*,' p. 1172, published in 1688, keeps up Parkinson's plant under his name, but adds to it Cornuti's *C. variegatum* as the same thing. In this he was mistaken, for a reference to Cornuti's work, published in 1635, with a rude woodcut, proves that his is a very different plant, a native of Messina, and is probably that now known as *C. Bivonæ*, *Guss.* The plant now called *variegatum*, and which is supposed to be the Linnæan one, is also a native of Greece, and is figured at tab. 1028 of this work (copied and reversed in Reichenbach's '*Flora Exotica*,' t. 57, without acknowledgment). This, Mr. Baker informs me, is a much larger species than the subject of the present plate, with less pronounced and coarser tessellation, and having sub-erect leaves a foot high and less undulated. It is known under the name of *C. variegatum*, *tessellatum*, and *agrippinum* in English gardens, and is liable to be killed in severe winters.

"With regard to Haworth's name of *chionense*, cited without a reference by Kunth, I can nowhere else find it; and having no means of knowing to what plant he applied it, I hesitate to apply it to this, which should henceforth bear the name of the acute old botanist who first published it, and whose quaint and characteristic description I here give at length:—

"This most beautiful Saffron flower riseth up with his flowers in the autumn, as the others before specified do, although not of so large a size, yet far more pleasant and delightful in the thick, deep blew or purple-coloured beautiful spots therein, which make it excel all others whatsoever: the leaves rise up in the spring, being smaller than the former, for the most part three in number, and of a paler or fresher green colour, lying close upon the ground, broad at the bottom, a little pointed at the end, and twining or folding themselves in and out at the edges, as if they were indented. I have not seen any seed it hath born: the root is like unto the others of this kinde, but small and long, and not so great: it floweth later for the most part then any of the other, even not until November, and is very hard to be preserved with us, in that for the most part the root waxeth lesse and lesse every year, our cold country being so contrary unto his natural, that it will scarce shew his flower; yet when it floweth any thing earlie, that it may have any comfort of a warm sun, it is the glory of all these kindes."—*Paradisus Terrestris*, p. 156.—*J. D. H.*—(*Bot. Mag.*, t. 6090.)

*BESCHORNERIA TONELLI.* *Nat. ord.*, Amaryllidaceæ. *Linn.*, Hexandria Monogynia.—Native of Mexico. "According to General Jacobi, who (in Otto's work), has given a sketch of the genera and species of *Agave*, the genus *Beschorneria* contains four species, of which two are now figured in this Magazine, and the others, *B. yuccoides* and *B. Parmentieri* (*Yucca Parmentieri*, *Roehl.*), are unknown to me. Unfortunately General Jacobi gives no description of *B. Tonellii*, his conspectus of *Aloineæ*, which was commenced in the work referred to, not having been continued to *Beschorneria*, and I am therefore dependant on the authority of Mr. Wilson Saunders's garden for the name this plant bears."—(*Ibid.*, t. 6091.)

*ACONITUM HETEROPHYLLUM.* *Nat. ord.*, Ranunculaceæ. *Linn.*, Polyandria Trigynia.—Native of the Western Himalaya. "Though a member of a most poisonous genus, it is in extensive use as a tonic medicine throughout N. India, under the name of *Atees* or *Atis*. It inhabits the whole Western Himalaya, from Kumaon to Kashmir, at elevations from 8-13,000 feet, growing in moist places, at the edge of forests, &c. It is a near ally of the famous Bikh poison of the same mountains, which does not seem to differ from our deadly *A. Napellus* (Monkshood).

"Dr. Royle says of this species:—'In the native works on *Materia Medica*, as well as in the common Persian and Hindoostanee and English dictionaries, *Atees* is described as being the root of an Indian plant used in medicine. This, the author learnt, was the produce of the Himalayas; he therefore sent to one of the commercial entrepôts situated at the foot of the hills, and procured some of the root, making inquiries respecting the part of the mountains whence it was procured. The plant-collectors, in their next excursion, were directed to bring the plant with the root attached to it as the only evidence which would be admitted as satisfactory. The first specimens thus procured, and the root *Atees* having been thus ascertained to be the produce of a new species of *Aconite*, was named *Aconitum Atees* (*Journ. Asiat. Soc.*, i., p. 459); but which has since been ascertained to be the *Aconitum heterophyllum* of Dr. Wallich.'"—(*Ibid.*, t. 6092.)

*PANAX SAMBUICIFOLIUM*. *Nat. ord.*, *Araliaceæ*. *Linm.*, *Polygonia Diercia*.—Native of New South Wales. "The singular beauty of the translucent berries which persist for a long time on the plant, recommend the latter for cultivation. These resemble White Currants in form and transparency, but have a faint blue tinge, and each is capped by a minute black calyx-lob, and two thread-like diverging or recurved styles. It is a native of extra-tropical Eastern Australia, extending from north of the New South Colony to Victoria; and a very similar plant (of which I have seen the leaves only) has been sent from Tasmania. Like so many *Araliaceæ* the Ivy notably, the leaf varies most extraordinarily, being simply or doubly pinnate, and the leaflets being quite entire, toothed, lobed, or pinnatifid, and the petiole flat or dilated between the leaflets. The flowers are small and insignificant; they appear in spring, and the whole berries ripen in September.

"*Panax sambucifolius* was introduced into Kew from the Melbourne Botanic Garden by Baron Mueller, and flowered for the first time in 1873."—(*Ibid.*, t. 6093.)

*EPIDENDRUM CRINIFERUM*. *Nat. ord.*, *Orchidaceæ*. *Linm.*, *Gynandria Monandria*.—Native of Costa Rica. This species flowered in Messrs. Veitch's splendid collection of Orchids last January.—(*Ibid.*, t. 6094.)

*RHOPIA POHLII*. *Nat. ord.*, *Proteaceæ*. *Linm.*, *Tetrandria Monogynia*.—Native of Brazil. "The genus *Rhopala* is one of the few American representatives of the Old World *Proteaceæ*, and is confined to the tropical and south temperate regions of the New World, where nearly forty species have been found, many of them in Brazil. They are, for the most part, exceedingly handsome evergreen plants, with dark green shining coriaceous leaves, and insignificant blossoms, usually dotted with a rusty or golden pubescence. The present species is a native of the province of Minas Geraes, in Brazil, and of the neighbourhood of Rio de Janeiro, whence it was introduced into Kew many years ago, from a Belgian garden I believe, probably Mr. Linden's, under the name of *R. corcovadensis*. It has flowered repeatedly in the Palm house early in the year."—(*Ibid.*, t. 6095.)

*DELPHINIUM KETELLERII*.—"For this fine hardy perennial *Larkspur* we are indebted to Mr. A. Waterer, of Knaphill. With him it grows 3 feet high, having bold deeply seven-parted leaves, 10 inches across, with broad incise-lobate segments; and flowers in dense spikes, nearly a foot long, having several short branches at the base. The blossoms are double, about 1½ inch across, cerulean-blue, the centre and base of the petals tinted with rose, a tuft of small white petals forming a white eye. This is a very desirable acquisition among the double-flowered hardy *Delphiniums*, which are plants of a remarkably effective character. Of these double sorts we may just mention *Madame Jacotot*, large, soft blue or amethyst; *Dr. Edwards*, dark blue, a noble spike; *Princess of Wales*, sky-blue, with white centre; *Madame le Bihan*, blue, shading-off to pinkish violet. The most brilliant of them all, however, is *D. sinense flore-pleno*, which we were glad to see Mr. Waterer had taken in hand, as the Knaphill soil and situation may probably suit it well. It is perfectly hardy, a true herbaceous perennial, which may be readily increased in the spring, either by division or from cuttings, the latter taken off when a few inches high rooting freely. The colour is an intensely bright, dazzling metallic blue. There are also some very fine single-flowered sorts of the type of *D. formosum*, deep blue, with white centre; and a very effective new one, raised by Mr. Ware, called *Cambridge*, of a pale grey-blue, with black centre, which is distinct in character, and really attractive."—(*Florist and Pomologist*, s. 3, vii. 73.)

*PEACH*.—*Rivers' Early Louise*.—"Fruit medium size, rather

oblate, with a deep and rather broad suture, ending in a depression at the top of the fruit. Skin pale straw yellow where shaded, mottled with crimson on the sunny side, the colouring thinly flushed with crimson dots, which extend, though more sparsely scattered, over most of the surface. Flesh whitish, without any tint of red near the free-stone, very tender and melting, with abundant juice, and a sweet and remarkably pleasant flavour. Good. Mr. Radclyffe remarks, in a note which accompanied the fruits:—"I sent two specimens of *Rivers' Early Louise Peach*. It is sweet, early, and delicious. They were grown on a severe east-aspect wall, where all perished after setting, except the *Royal Georges*, which are good on all walls, in-doors and out. *Early Louise* has small flowers and kidney-shaped glands. It is a long way earlier on a severe east wall than any other early ones, such as *Early York*, *Early Victoria*, and *Early Alfred*, are on a warm south wall. I consider it a great gain, and that it adds another gem to Mr. *Rivers'* already radiant crown. They were ripe on August 1st."—(*Ibid.*, s. 3, vii. 85.)

## NOTES ON VILLA AND SUBURBAN GARDENING.

THE secret of obtaining a brilliant display of flowers throughout the season lies more in cultivating a great quantity of good plants than a great variety of sorts. Thus, at this season the garden should be gay with *Polyanthuses*, *Auriculas*, double *Primroses*, the lovely little *Omphalodes verna*, *Drabas*, common *Wallflowers*, various species of *Arabis* and *Aubrietia*, and many other Alpine plants; while among shrubs nothing can be more beautiful at present than the various kinds of *Ribes* and *Berberis*, with the showy *Magnolia conspicua*, whose pure wax-like and deliciously fragrant flowers render it a treasure without which every garden must be incomplete. These are plants comparatively common and easily obtained, yet how seldom is it that we see them grown in any quantity! In fact, these good old things have been of late years altogether neglected, while we have been running after *Dahlias* and other ephemera, which require great pains to cultivate them well, and which frequently are no sooner in bloom than they are cut down by the frost. This is neither good, nor good management, and therefore the amateur is earnestly recommended to set about increasing his stock of spring-flowering plants. Flower gardening, indeed, will never be done well unless the arrangement is made as the season passes on. Thus, at this period it should be determined what plants are to be put in the beds next spring, and preparations should be made accordingly, and at the same time a similar arrangement should be made for the summer and autumn display in the coming year.

Gardening is an occupation wholly dependant on forethought; and although it cannot be expected that the amateur who only cultivates flowers as a little recreation and to vary the monotony of business life, should recollect all that requires to be grown in the flower garden, yet by making memoranda at the proper time, and by referring to them occasionally, he might provide himself with many things which, by trusting to memory, are wholly forgotten until the season arrives when the plants should have been in bloom.

What can be more beautiful than a large bed of common garden *Anemones*? These, when selected and grouped in separate beds according to the complementary colours, are brilliant objects, yet how rarely do we see them extensively cultivated. This is a good season to sow them, and, in fact, biennials of all kinds. The *Anemone* delights in a strong rich soil. The best way to sow it is to make the soil fine and light, and then to mix the seed with a quantity of dry soil, scatter it thinly over the prepared border, and cover it with sifted soil from the potting-shed. Seed sown now will produce flowering plants this time next year, and there is an old saying, with some truth in it—viz., that if you sow every month you will have *Anemones* in bloom throughout the year.

Seed of *Auriculas* and *Polyanthuses* must be sown in pots and the seedlings transplanted into light rich soil; and those who are partial to *Gladioluses* could not do better than sow some seed in heat and transplant towards the end of May into very rich soil. Part will make flowering plants the first season, and the whole in the second.

In the preparation of ground for planting and for grass, the difference in the requirements will have distinctly to be kept in mind. Plantations can hardly have too much good soil. A thorough provision of suitable and mellow soil will almost neutralise the disadvantages of climate or situation, and keep plants always flourishing and healthy. For lawns, on the other hand, a light, shallower, and poorer soil, if it be properly drained and worked previously to sowing, will be preferable, as tending to keep down undue luxuriance, to promote the growth of the finer grasses, and to check the development of rank weeds.

Ground that is in any degree heavy, or that has been newly drained, ought to be trenched all over, whether for grass or plants. If the subsoil is clay, it may be turned up loosely in

the bottom; but if a lighter material, it should be brought to the surface for plantations, and simply turned over in the bottom of the trench if for grass. It will always be undesirable to bring clay to the surface in pleasure gardens, though in kitchen gardens, where it can be freely worked and mellowed for several years, the common mode of inverting the positions of the surface soil and the subsoil may be adopted. The reason for working a lighter subsoil to the top in plantations, and not for grass, is that better earth can be added to the former, when the subsoil shall have been blended with this in planting. While it is rather intended to take away several inches of the top soil from the grass land and transfer it to the plantations, 2, 3, or 4 inches of the best earth, according to its natural depth, may thus be abstracted from the parts intended for the lawn, and will go to raise and enrich the plantations without injuriously affecting the grass. From 9 to 12 inches in depth of the commonest soil will be amply sufficient for growing lawn grasses to perfection.

If the soil of a garden is moderately light, and a good mass of it be procured for the shrubs and trees and for the flower beds, manures beyond such as lime, soot, wood ashes, decayed leaves or wood, or any similar matters will be quite improper for the ornamental part. Roses, however, demand a richer soil, and are much improved by the aid of some well-rotted manure, which should not be grudgingly applied.

But where the earth is stiff and clayey, and not enough of lighter soil is within reach to correct the retentiveness and incapacity for growing plants, manures will then not only be beneficial, but necessary. Common stable manure can be largely applied with advantage in such cases, while lime, bonedust, coal ashes, or the sweepings of streets will be invaluable.

The amateur may now sow a little late spring Broccoli; he should also take care to have plenty of plants of various greens intended to succeed the summer crops. Scarlet Runners may be planted towards the end of the month, also Nasturtiums, and a row of Red Cabbage, if not already done. A few Gherkins may be sown now on a southern slope. These will supply all the pickles required.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### KITCHEN GARDEN.

WE were glad that an opportunity was afforded us to run the hoe through a portion of the kitchen garden, as some smart showers have fallen since, and the ground was dry and open to receive them.

The longer ground can lay fallow before it is sown with seeds or planted the better, but it is not always possible to have everything just as one would like in this respect. If ground is trenched or dug over in autumn, it will generally be in the very best condition for the crops now. The Carrots were sown on ground not well prepared. It had been trenched a day or two before the rain came, so that the surface had become dry and the seeds went in well.

It is now a good time to sow *Broccoli*; but we have found it necessary to discontinue its cultivation, as, owing to the nature of the soil or from some local cause, it does not succeed. Veitch's Autumn Giant Cauliflower may also be sown; it succeeds the Walcheren, and should be grown in all gardens. Two of the best *Broccoli*s are Snow's Superb Winter White, and Cooling's Matchless, a fine white self-protecting sort. Perkins's Leamington is a new sort, well deserving of extended trial; the heads are very close and white, being thoroughly protected by the leaves. This promises to be one of the best late sorts in cultivation. Carter's Champion, late white, is one of the most select late sorts. Any of the above may be grown without fear of failure.

Sowed *Sea-kale* in rows 2 feet apart; the plants are thinned-out to about 6 inches apart, and in good soil a large proportion of them will be adapted for forcing the ensuing season. Those not strong enough for this purpose will be planted-out in rows 2 feet apart, and 1 foot plant from plant in the row.

We also made a sowing of *Pears*, principally G. F. Wilson and Veitch's Perfection. Sowed half a pint of Laxton's Fillbasket. The seedsmen, instead of charging 5s. a quart for a new *Pear* as heretofore, now charge 5s. for half a pint. Under such circumstances it is necessary to save all the first crop for seed. We sow thinly, and allow ample space on each side of the line.

Little can be done amongst fruit trees. See that the walls are well covered at night when there are any signs of frost. Apricots were not in full flower when the frost was so severe, and blossoms not expanded at that time do not seem to have suffered.

### FRUIT AND FORCING HOUSES.

*Pinerias*.—Attend to instructions as to management given two weeks ago. Nearly all the fruiterers have thrown-up fruit, and unfortunately the succession plants have also thrown up. The plants having been potted in small pots, the soil ought not to have been allowed to become too dry during winter, and they ought to have been shifted early in February. It is extremely annoying to the cultivator when succession plants start into premature fruiting. Any fruits of Smooth-leaved Cayenne

approaching to ripeness should be lightly shaded from the noonday sun with a sheet of paper. If this variety is touched with the sun it will not keep more than a few days, whereas if well ripened it will keep a month in a cool fruit-room after being cut.

*Cucumber and Melon Houses*.—The Cucumber plants that have been in bearing since Christmas would still continue to produce good fruit; but the soil that was available at the time they were planted was not very well adapted for growing Cucumbers, and we have thought it desirable to take the old plants out and replace with young. These were of large size, and will come into bearing immediately. The Cucumber luxuriates in almost any turfy soil. Turfy peat suits it, and turf from light or heavy loam seems equally well adapted to its wants. A fourth part of decomposed manure should be added to it. Whatever the nature of the soil may be, it ought to be porous. Fumigated the house with tobacco smoke to kill green fly and thrips. Tying the growths of Melon plants to the trellis overhead; this attention is necessary twice a-week. The lateral growths have been stopped as well as the leaders of some of the plants, which had grown nearly to the extent of the trellis. Red spider has not yet appeared on the plants, and we do not care to syringe them when the weather is cold. None of the fruit has set as yet.

The orchard-house trees have been smothered with blossoms, and the fruit appears to have set pretty freely. Sparrows are fond of picking off the flowers when they first open, and they do not seem to have any other object in view than to drop them on the ground. A few of them were killed, and they gave it up. In some seasons it has been necessary to place netting over the ventilators to prevent their entrance. Strawberries on shelves are growing freely, and required more space. Every alternate pot was taken out and transferred to another house. Picked all dead and decaying leaves from the plants. Placed a batch of Keens' Seedling and Premier in the forcing house.

### GREENHOUSE AND CONSERVATORY.

Besides the permanent occupants of these structures there are always fresh relays of flowering plants, forced or otherwise, which are taken in while in flower, to be removed afterwards only to give place to other plants that are also coming into bloom. At present a row of specimen plants of *Deutzia gracilis* forms a foreground of snowy cylinders, and they have a charming effect against a background of Camellias, Oranges, and other plants. Our specimens of *Deutzia gracilis* which received the first prize at the Royal Botanic Gardens, Regent's Park, though they were not at their best, were much admired, and received more than the usual meed of praise from the horticultural press owing to the style of training. The plants were propagated from cuttings of the young wood nine years ago, and have been grown-on and flowered in pots every year since. They are potted every year when the wood is nearly ripened—that is, in July or August. The plants are placed in a shady position out of doors during the summer months, and are well supplied with water. Cuttings of the young wood, taken off in May and inserted in light soil, will strike in a hotted as freely as Verbenas.

A continued succession of *Roses* should be kept up. No greenhouse or conservatory should be without early-flowering specimens of the queen of flowers. Hybrid Perpetuals and Teas are the best adapted for forcing, though some of the old Hybrid Chinas, if the collection is moderately large, should not be omitted. Charles Lawson, for instance, is not surpassed by any other as a pot Rose for exhibition purposes. A not-uncommon mistake with those who force *Roses* is to turn the plants out of doors when they have done flowering. This is sometimes a necessary act owing to want of space at this season, but it is injurious to the plants; cutting winds make short work of leaves that have been nurtured under glass.

Stage Pelargoniums require to have sticks put to the shoots, and to be kept free from green fly by fumigating. Tying-in the growths of *Lapageria*; these are now making rapid progress, and if the shoots are allowed to twine together it is very difficult to untwine them without injuring the leaves. Of the two varieties the pure white is the stronger grower, but it is also the more difficult to propagate, hence it is that its price is still so high. No greenhouse should be without both the varieties. No other climbing plant that can be grown in a cool house at all approaches them in beauty.

### FLOWER GARDEN.

Owing to cold high winds it has not been desirable to place any more plants out from their glass protection. The most common plants should not be placed out of doors when the weather is unfavourable. Potting-off Zonal Pelargoniums and planting such subjects as Verbenas in boxes. Cuttings of herbaceous Phloxes were put in a few weeks ago, and are now rooted. Many amateurs of small means fancy that they must have a heated greenhouse before they can make their flower gardens look decent during the summer months; and in truth there is very little of the old-fashioned flower garden to be found anywhere. What is often seen now is bare ground all through the spring months up to the end of May, then a blaze of scarlet, purple, white, and yellow for two or three months, and desola-

tion again. In small gardens some of the more showy herbaceous plants are far more interesting than masses of scarlet Geraniums and others of that class. How cheerful our borders are just now with Primroses (single and double), Polyanthus, Hepaticas, different shades of red and of blue, as well as the white! Border Narcissus, from the small *N. juncifolius* and *N. minor* to the towering Daffodil; clumps of the pretty blue *Scilla amena*, a wee modest flower, and the early Forget-me-not (*Myosotis disitifolia*) help to complete the picture. All are hardy and quite independent of the aid of glass. Tender alpine plants in open borders require to be looked over at night with a good lamp, and all slugs and other pests destroyed. Roses are making growth in sheltered places; the bad worm is troublesome and must be destroyed.—J. DOUGLAS.

### TRADE CATALOGUES RECEIVED.

Timothy Bridgen, 52, King William Street, London, E.C.—*Select List of Flower, Vegetable, Agricultural, and Tree and Shrub Seeds, &c.*

William Paul, Waltham Cross, London, N.—*Catalogue of New Roses, Geraniums, Phloxes, Dahlias, Fuchsias, &c.*

A. P. Jones, Fond du Lac, Wisconsin.—*Semi-Annual Price List of Bedding and House Plants.*

### TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

Books (*E. Bathe*).—Our "Fruit Manual" may suit you. If you enclose five postage stamps with your address, you can have it free by post.

CINERARIA SEEDLINGS (*Filter W. H. P.*).—They are handsome flowers, and No. 4 fine, but there are many like them. Besides, much depends upon the habit of the plant; it ought to be stout, bushy, and the flowers well above the foliage. (*Inquirer*).—You had better send potted specimens to the Floral Committee of the Royal Horticultural Society. No opinion can be formed from a written description.

NURSERYMEN AT INNSPRUCK (*F. Bell*).—We are sorry we cannot furnish you with the name of any nurseryman at Innsbruck.

ANTHURUM SCHERZERIANUM (*Lady in Cheshire*).—It is not an Orchid. It belongs to the natural order *Orontiaceae*. It is a native of Costa Rica, and its scarlet inflorescence has occasioned its popular name, "The Flamingo Plant."

SELECT PANSIES (*Geo. Fenton*).—It is difficult to say which are the best twelve Pansies. The following are good ones:—Alex. Tait, Cloth of Gold, Isa Craig, Lady Lucy Dundas, Miss M. Carnegie, Mary Lamb, Pladda, Czar, J. B. Downie, Orion, Prince of Wales, and Lord Derby. The best way to grow them for exhibition is either in pots or planted-out in a frame.

AURICULAS IN THE OPEN GROUND (*Alfred C. Smeaton*).—We fear you will hardly succeed in your attempt to grow Auriculas in the open air, certainly not selfs. We have tried Alpines ourselves, but the highly-bred ones suffer severely. It is not the cold, but the damp which destroys them. We know of no treatise on their culture, but in the back volumes of the Journal there are copious directions.

BUILDING A CONSERVATORY (*Inquirer, Sevenoaks*).—Write to several of the builders who advertise in our columns, stating the size and other particulars, and ask them for an estimate. See what Mr. Robson said the other day about boilers.

PEACHES DROPPING (*An Old Subscriber*).—You do not state any temperatures, nor do you say whether the fruit has set thickly: if it has done so a number will be sure to drop. The house being so much shaded would also be against them. See that the roots are all right: well water the inside borders if they require it, and mulch the outside with 3 or 4 inches of short manure. See also weekly "Doings." Duke of Buccleugh Grape has not been tested to any great extent, except in the hands of the raiser, but it promises to be one of the very best early white Grapes.

AERIAL ROOTS ON VINES (*M. P., Batham*).—These are in no way injurious to the Vine, and whether you cut them off or leave them it will not make any difference. They are caused by an over-moist atmosphere in the house. Sulphur water in the evaporating-troughs will not kill red spider nor check them in the least. You must paint the hot-water pipes with it, but not when the Orapes are in flower, otherwise the berries may become rusted. It may be done two weeks after the Grapes are thinned.

MUSCAT GRAPE BLOSSOMS BLIND (*Muscat*).—This is not, as you suppose, caused by woodlice, but from the wood being imperfectly ripened last year. We have also seen the same thing happen when a very heavy crop had been taken from the Vines the previous year.

SELECT DAHLIAS (*J. C.*).—The following are good and not expensive. *Show*.—Alexander Cramond, Andrew Dodds, Chairman, Charles Backhouse, Charlotte Dorling, Criterion, Flag of Truce, High Sheriff, James Cocker, John Standish, Kate Haslam, Leah, Lord Derby, Lord Palmerston, Maid of Essex, Mrs. Henshaw, Ne Plus Ultra, Sam Naylor, Tolson d'Or, and Umpire. *Fancy*.—Chameleon, Dolly Varden, Ebor, Fanny Sturt, Flossie Williams,

Marquis of Lorne, Negress, Pauline, Queen Mah, Sam Bartlett, Sparkler, and Victory.

SCALE ON VINES (*F. P. G.*).—It is the Vine scale (*Coccus vitis*). The usual application of soft soap and sulphur will destroy it. The *Selaginella* will do best on the border of a greenhouse or conservatory. It requires plenty of moisture. The purple flower is *Polygala grandiflora*, and the white flower is *Eriostemon myoporoides*.

WATERCRESS (*J. W.*).—The specimen was too bruised for us to determine. Send us a specimen when it is in flower.

PEACHES—TOMATOES AND CUCUMBERS IN GREENHOUSE (*A New Beginner*).—Peaches do not require similar management to Vines, differing materially as regards temperature, &c., particulars of which you will find in "Keane's In-door Gardening." It may be had by post from our office for 1s. 7½d. Tomatoes and Cucumbers may be grown in a small greenhouse if it is kept rather close, and heat afforded by the flue. You might grow Tomatoes without the heat of the flue, but not the Cucumbers, unless the house were kept too close for the health of any other plants requiring greenhouse treatment. The Tomatoes would succeed without extra heat or keeping the house close.

WATERPROOF CAPE (*Pette*).—A cape, from its being easily put on and off, would be very useful for a gardener. It ought to be a good long one, so as to throw the water clear of the loins, and should be accompanied with long leggings. Inquiry of a tradesman in a large town would secure you the needed information as to where they could be procured.

LONGEVITY OF HELIOTROPE PLANTED-OUT (*W. J. W.*).—It will live for a number of years in a conservatory border, probably fifty or more years. We have very vigorous plants at from twenty to thirty years old covering a large extent of trellis.

PLANTING SAVOYS (*Idem*).—It is rather uncommon to plant Savoys at this time of year, but it is sometimes practised, the seed being sown in August and treated the same as early summer and Red Cabbages. They form large heads, and are as good in summer as in winter, only the popular idea is that Savoys require frost to make them tender.

ANTS IN VINERY—VINE SHOOTS DYING (*C. S.*).—The ants do no good, but we cannot say we have experienced any injury from them in a vinery. Take some pieces of sponge thoroughly dried and clean, fill them with powdered loaf sugar and place them in the runs. The ants will enter the sponges in quest of the sugar and may be thrown into boiling water, and the sponges washed clean, dried, and refilled with sugar. Small jars with an inch of salad oil poured in may be placed in their haunts, and be emptied when the number of ants entrapped prevents others sharing the same fate. When the oil becomes rancid replenish with fresh, first cleaning the jars thoroughly. The Vine shoots are probably dislocated at their junction with the cane by tying or being "knocked."

CUCUMBER STEMS CRACKED (*Idem*).—The cracking is not prejudicial to the plants. It mainly arises from the plants being weakly in their early stages of growth, and afterwards becoming vigorous owing to richer soil or more liberal treatment.

DISBUDDING VINES (*Ignoramus*).—We should reduce the eyes or shoots to three, commencing with the base of the rafter or where you have the wires, train the uppermost up as the principal rod or cane, and the two below as side shoots to the right and left of the cane, securing them to the wires, and stopping them at the sixth leaf. The leader need not be stopped until it reaches the top of the house, and the laterals may be allowed to grow, especially those at the base of the cane; but on the upper half of the cane we should stop them at the first leaf so as to encourage those lower down, and so keep the cane as thick there as higher up. They may be allowed to grow until the growth is complete, and then be gradually removed, finally taking them off when the cane is pruned after the leaves have fallen. The cane from which the eyes have been rubbed may be cut off when the young shoots are in good leaf. We would not disturb the Vines in pots until we had seen them show for fruit, and we would then reduce the number one-half, or to 8 inches apart; and only half the number of shoots at that distance should be allowed to carry a bunch each, or say from eight to a dozen bunches per Vine according to its strength.

GARDENIA UNHEALTHY (*A. B. C.*).—The plant is in a bad condition, we think at the roots. We should at once cut-back any irregularity of growth but not very closely, and, after keeping rather dry for a few days, report, removing any old soil coming away freely from about the roots; in fact, all that can be taken away without destroying them. Report in a compost of equal parts of fibrous loam and sandy peat, with a few pieces of charcoal and a sixth part of silver sand, providing good drainage. Place in a moist bottom heat of 75° to 80°, and a moist atmosphere; water sparingly at the root until the plant is growing freely, then more copiously. Continue the plant in the moist heat until the growth is complete, and towards the end of summer expose fully to light, and water only at the root to keep the plants from flagging during the winter. Placed in a moist heat in February or March it will most likely flower next season. Pruned now it would not flower in autumn.

GRAPE BUNCHES CURLING AND SHRIVELLING (*Idem*).—The evil is mostly due to the roots being deep in a cold and wet border, and in your case probably outside border. The removal of the soil a foot deep and replacing it with fresh would not occasion the mischief. But why cover the roots a foot deep? Some heating material ought to have been placed on the border a fortnight before commencing to force. This would have excited the roots before the tops, and then it is likely the bunches would not have curled, while the covering would also have induced the roots to come to the surface. The heating material ought to remain on the border until May, and then by degrees be withdrawn. We leave ours on the early-house borders until after the fruit is ripe. Too high a temperature in the house when the bunches are showing, and too dry an atmosphere, too low and variable a temperature from high to low in a short time, too free air-giving, or a cold dry current of air, will sometimes cause the bunches to curl, but the main cause is the roots not supplying sap to meet the demands of the foliage in bright weather. See to the border, and make it dry and warm.

FUCHSIAS IN GREENHOUSE (*Mrs. V.*).—Cut-in the shoots of last year to within two or three joints of the old wood, and keep the plants rather dry for a fortnight or three weeks. When they are making fresh shoots a gentle sprinkling overhead may be given twice daily, and when they have shoots an inch long turn the plants out of the pots, remove all the old soil that can be taken from amongst the roots, and report in the same or a smaller size of pot—a size that will hold the roots and allow of a little soil all round. A compost of fibrous loam three parts, half a part each of old cow dung and leaf soil, with one-sixth each silver sand and nodules of charcoal, and efficient drainage, will

grow them well. Sprinkle overhead morning and evening, but water sparingly at the root, and shade from bright sun until they have recovered from the potting, after which afford a light airy position. Water more freely as the plants grow, and when the pots fill with roots shift into others 2 inches larger in diameter, and if large plants are wanted the shift for vigorous plants may be a trifle more liberal. To induce a bushy habit the shoots should be stopped one joint before the flower buds appear, and any very vigorous shoots may be stopped at the third or fourth joint. The stopping ought to be discontinued six to eight weeks before the plants are wanted to flower.

**MACRAYA BELLA CULTURE (E. L.).**—It is a greenhouse shrub, from Natal. Remove it to the greenhouse at once, affording it a light airy position, watering copiously when growing, and when the growth is complete afford no more water than will be sufficient to keep it from flagging. If it has started in the stove allow it to complete the growth before removing it to the greenhouse. The flowers are very pretty, of a pale lilac colour, and produced in racemes from the points of the shoots; consequently these should not be stopped, and any pruning required must be performed before the plant starts into growth.

**BET STRINGY (Y. G.).**—It is mainly owing to growing it in poor soil, and sowing too early. The ground should be well dressed with rotten manure in autumn, and dug. In spring dress with lime, fork over and make fine, and do not sow until the third week of April. Some kinds of Beet are more apt to become stringy than others. Dewar's, Chelsea, and Nutting's are fine and of good flavour.

**PRUNING GOOSEBERRY BUSHES (Idem).**—The spur system is best, leaving only such wood as is required for extension, or replacing old worn-out branches.

**SEEDLING VIOLET (Geo. W. Boothby).**—Your seedling white Violet appears much larger than the old white, the colour is very pure, and it is extremely fragrant.

**ANTS' NESTS (S. L. R. T.).**—At night, when they are all in, soak the nest thoroughly with the strongest ammoniacal liquor from the gas-works. Repeat the operation if needed.

**DOCKS AND DANDELION IN ORCHARD (Subscriber).**—They are readily killed by cutting off their tops an inch or two below the surface of the soil, and letting fall on the roots left in the ground one or two drops of sulphuric acid. It will also destroy any roots of the trees that it may touch, therefore be careful. Why not take up the Docks and Dandelions with a dock fork, which will remove all but the very small or side rootlets? It may be had of most horticultural-implément dealers.

**ORCHARD-HOUSE APRICOTS UNFRUITFUL (W. K.).**—The trees are probably planted in too rich soil, and therefore their tendency is towards growth rather than fertility. We should lift them next autumn as soon as the first leaves begin to fall, and without root-pruning more than shortening any thick long roots which are bare of fibres, return them to the same spot after working in some mortar rubbish from an old building, and so that the tree will stand on the level. Cover the roots, and the ground for a foot further than they extend, with a compost of three parts sandy loam and one part of old lime rubbish, raising it about the stem in the form of a cone. Cover the uppermost roots about 2 inches deep. The centre of the cone round the stem should be dish-shaped, so as to hold water, of which a good supply should be given immediately the operation is complete. Do not stop the shoots until they have made six leaves, and then take out their points, and afterwards stop at every inch of growth.

**KEEPING BEDDING PLANTS IN GROUND VINERY (F. I.).**—It will not in the least injure the Vines as long as the bedding plants do not interfere with the foliage. The wetting of the Vines in watering will be more beneficial than injuries.

**EARLY BLOSSOMING OF FRUIT TREES (Idem).**—The blossoming of fruit trees is this year earlier than usual, of course owing to the mildness of the weather. Continue to protect the trees, but only in frosty weather. We should extend the protection to the trees at present unprotected, continuing it for the young fruit, which are as susceptible of injury from cold, if not more so, as the blossom.

**MOULD ON CUTTING-PANS (M. D.).**—The mould, from your description, is that common to softwooded plants when damping-off through being put in closely in rich vegetable soil, or a soil full of vegetable matter in a decaying state, as the fibres of turf in loam, also leaf soil. The only remedy is to use a poorer, sweeter, and sandier soil, and to preserve a better ventilated and drier atmosphere. Most plants strike root more readily in sand than in a rich soil.

**MOSK TURNING YELLOW (A. S.).**—Probably the plants turn yellow from too much moisture at the roots. Afford a light airy position, and keep moist, but avoid making the soil sodden. A gentle sprinkling overhead morning and evening with water is advantageous. We presume the plants have been repotted.

**SITE OF HOUSE (T. J.).**—We consider the site of your house, and, of course, garden, with a north aspect, though not so good as a southern one, will, nevertheless, answer for most kitchen-garden crops and the growth of such fruits as Strawberries, Currants, and Gooseberries, which would succeed admirably. The crops would be some days later than on the opposite side of the hill.

**HARDY PERENNIALS (Ben).**—*Acanthus lusitanicus*, *Aconitum autumnale*, *Adonis vernalis*, *Agrostemma coronaria* flore pleno, *Alyssum saxatile* compactum, *Anemone japonica*, *A. Honorine Jobert*, *Aquilegia Skinneri*, *Asclepias tuberosa*, *Aster divaricatus*, *A. tenuifolius*, *Aubrietia purpurea*, *Baptisia australis*, *Betonica grandiflora* alba, *Campaulna aggregata*, *Centranthus ruber*, *Chelone barbata* splendens, *Commelina celestis*, *Delphinium alopecuroides*, *D. Belladonna*, *D. Madame Lelandais*, *Dielis* spectabilis, *Erigeron philadelphicus*, *Gallega* alba, *Geranium pratense* flore pleno, *Helicopsis niger*, *Hemerocallis flava*, *Hepatica angulosa*, *Lobelia* St. Clair, *Lychnis Haecaea*, *Myosotis dissitiflora*, *Onoclea grandiflora*, *O. macrocarpa*, *Orobis veranus*, *Præcox*, *Papaver nudicaule*, *Pentstemon Wrighti*, *Phloxes*, *Polygonatum multiflorum*, *Primula japonica*, *coriandroides*, *Pyrethrum* varieties, *Ranunculus acris* flore pleno, *Salvia lusitanica*, *Scabiosa austriaca*, *Sisyrinchium grandiflorum*, *Spirea palmata*, *S. japonica*, *Statice Gmelini*, *Thalictrum anemonoides* flore pleno, *Tricyrtis hirta* grandiflora, *Tritoma Burchelli*, *Trollius europæus*, *Veronica corymbosa*, and *V. amethystina*.

**RASPBERRY RHUBARB (Idem).**—We do not know of any by that name, but it is probably the dwarf red kind, of excellent quality, known as Tobolsk.

**HEATING SMALL CONSERVATORY (Tyro).**—We should have a gas boiler within the house and not in the kitchen, with a pipe carrying off the fumes of the consumed gas into the external air, which would prevent any injury to the plants; and by having the boiler in the house you would secure the heat

of the boiler as well as that from the hot-water pipes. Two-inch pipes are much too large for heating by gas; 1-inch pipes are what you need, and four rows of those on the front side of the house, not the back, and along one or both ends, would be sufficient in the most severe weather to keep out frost. The four rows of 1-inch pipes will give you the same amount of heating surface as two rows of 2-inch pipes, with only half the quantity of water to heat, which will effect a saving of one-half in the consumption of gas. You will see in our advertising columns gas boilers that may suit you.

**GRAFTING RHODODENDRONS (D. L.).**—It is best performed in August or September, when the young shoots have ripened, or it may be practised in spring before growth takes place. Side grafting is the best, the head of the stock being only partially cut back. After grafting they should be kept in a close frame and shaded until the grafts have taken.

**HOLLY HEDGE PLANTING (T. B. B.).**—The present is as good a time as any in spring for planting a hedge of this evergreen; but a better time is at the end of September, or as soon after as the weather is moist. Plants 12 to 18 inches high are the most suitable. It will be many years before they will form a fence. A quicker-growing hedge, and semi-evergreen, is formed of Holly and Thorn, one Holly and five Thorns per yard. The Hollies for a hedge should be planted 1 foot apart.

**CANNA PLANTING (Kittie).**—As you have not the convenience to start them in heat you may at once plant them out, the soil being of a sandy nature enriched with leaf soil or well-rotted manure. The roots should be planted about 3 inches deep, and covered that depth with soil. They may be left permanently in the ground, covering in autumn with 3 inches thick of litter or partially decayed leaves, doubling the thickness in December, or before severe frost. It should be removed in March.

**WALLFLOWERS LEGGY (Idem).**—It will not answer to plant them up to the branches. It is much better to raise plants from seed annually, which, if they are pricked-out early and planted at a good distance apart, will form bushy plants.

**PRIMULAS AND CINERARIAS FROM SEED (Idem).**—The size of the flowers is greatly dependant on the cultivation, and also on the strain of plants from which the seed is saved. Why not save seed of select plants, and thereby improve the size and colours of the progeny? Inferior strains are a great disappointment; therefore, in ordering ask for the very best, remembering that the price will be in proportion to the quality of the seed.

**DESTROYING WIREWORMS (A. F. B.).**—They are very difficult to destroy. Lime water, though useful, will not do so; a dressing of quicklime at the rate of seventy bushels per acre is preferable. Gas lime is probably the best thing to employ. It should be spread over the ground prior to putting-in the crops, and pointed-in with a fork. We have also found great benefit result from soot applied so liberally as to make the ground quite black. In flower borders or small plots you may use pieces of carrot an inch or two long, into which a stick is thrust to indicate where the bait is placed. The baits may be covered 2 inches deep, and every second or third day the wireworms will be found partly embedded in them, and can, of course, be destroyed, and the baits re-inserted.

**TRITELEIA CNIFLORA AFTER FLOWERING (Idem).**—Gradually harden-off the plants which have flowered in pots, or place them in a cold frame for a short time, and afterwards plant-out in the open ground in a sheltered border in light sandy loam and with the ball entire, where they may remain undisturbed for years, merely requiring to be taken-up occasionally, say every three years, divided, and replanted. They should be planted about 2 inches deep. The largest bulbs may be taken-up early in autumn, potted, and treated the same as *Hycinthus*, &c., in the greenhouse.

**ACACIA ARMATA CULTURE (Lady J.).**—*Acacia armata* is the proper name of the spray sent us. Any irregularities of growth should be cut-in after flowering, and the plant repotted if necessary, removing any loose soil, and loosening the sides of the ball with a pointed piece of wood. Use a pot about 2 inches more in diameter than the old one. After potting sprinkle with water twice daily, morning and evening, and water sparingly until the roots are working freely in the fresh soil, then give moisture more plentifully, and afford a light airy position. In winter water only to keep the foliage fresh, but do not allow the plants to suffer from want of water, otherwise the leaves will fall. It requires to be grown in a greenhouse, and does well in a compost of equal parts of turfy light loam and sandy peat, quarter part leaf soil, and a sixth of sharp sand, with good drainage.

**EUCHARIS CORONATA CULTURE (Idem).**—It is a stove evergreen bulbous plant, and requires to be grown in a compost of equal parts of turfy loam and sandy peat, with a fourth of leaf soil, a sixth of silver sand, and a few nodules of charcoal. The bulbs should be potted up to the neck, and after potting be placed in a bottom heat of 75° to 80°, and no water given until they are beginning to grow, then water moderately, increasing the supply with the growth. Keep moist until the growth is complete, and then gradually lessen the moisture and withdraw from the bottom heat, placing in a light and cooler house for from six to eight weeks, then return to the stove, when the plants will most likely go to flower. When they begin to grow encourage growth by fresh potting and a moist atmosphere, with bottom heat, which last is not essential, only the growth is more free; when it is complete rest the plant in a drier and cooler house.

**COWAN'S SYSTEM OF HEATING (J. P. York).**—The system is much older than that you quote from the work published by the Society for the Diffusion of Useful Knowledge. In an early volume of *London's Magazine* there is a drawing and description. The difference is in the arrangement.

**ROSES FAILING (H. G. M.).**—The bark dying first in patches and then the entire branches dying, tells that the roots do not supply a sufficiency of sap to sustain the growth. Your last sentence tells why—"the soil is chalky." Let the soil over the roots be removed and rich soil substituted; keep the surface mulched, and give abundance of water during the growing season.

**INSECTS ON APPLE, PEAR, AND OTHER FRUIT TREES (Name omitted).**—The account you give of the cause of the injury to your trees is quite intelligible in respect to its four different stages and its final mig (midge?) like form. What we found in your envelope were a number of particles of bark free from insects; on a few of them were several minute *Thysanurus* insects, named *Lipura corticina*, which feed on other minute insects; and what you fancy to be their eggs is a minute red fungus. There must be some other cause or causes of the injury you complain of.—I. O. W.

**INSECT ON HELIOTROPE (H. D.).**—There is no mildew but some insect, which from the dried skins on the leaves is evidently a kind of aphid. The remedy will be to shut-up the house on a calm evening and fill it with tobacco smoke, so that a plant cannot be seen from the outside through the glass.

The plants may be well syringed the following evening, but on the night of the fumigation their foliage ought to be dry.

NAME OF FRUIT (*Charles Browning*).—Dr. Brétonneau. It never ripens, and is only fit for stewing in this country.

NAMES OF PLANTS (*Young Gardener*).—We do not recognise the plant sent further than that it is a Ranunculus. Send a specimen in flower. (*L. J. G. B.*).—The common Maiden-hair Fern is the *Adiantum capillus-Veneris* of botanists.

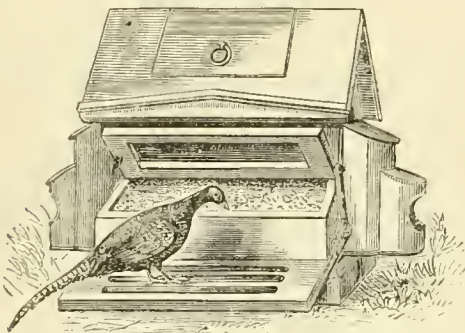
## POULTRY, BEE, AND PIGEON CHRONICLE.

### THE SPENCER PHEASANT, GROUSE, AND POULTRY FEEDER.

KNOWING that this has been tried and approved we wrote to the maker, Mr. Le Butt, Bury St. Edmunds, and he sent us the following particulars:—

1. It is made of wood lined with zinc, consequently is more durable, less likely to be injured by boughs falling, or other accidents occurring in a wood or in preserves, and will, with care, last a lifetime.

2. The corn is entirely protected from the weather, and by a novel application of glass the corn is always visible, which instantly attracts the attention and arouses the ingenuity of the



birds the first time, and in less than a minute they find out how to help themselves, and never afterwards forget.

3. It is rendered vermin-proof by so arranging and balancing a platform that it requires the length as well as the weight of a Pheasant or Grouse to lift up the covers, while the troughs are self-feeding; and the moment the birds step off the platform the lid of the feeding-trough instantly closes.

4. They are made to hold about a bushel and a half of Indian or other corn, and, as there is a trough on each side, a dozen birds can easily feed at a time.

It has been highly approved by the Head Keeper (Mr. Dudley) of the Marquis of Brintol, at Ickworth, Suffolk; that well-known sporting gentleman residing at Bury St. Edmunds (Mr. Charles Nunn); the Head Keeper to H.R.H. the Prince of Wales (Mr. Jackson, of Sandringham), and others.

HEN'S ENDURANCE OF FASTING.—A singular evidence has just occurred at Weybridge that fowls can live for a long period without food or water. A month ago Mr. Barnard, of the Hand and Spear Hotel, missed a fine Black Spanish hen, and she was given up as lost. However, on the 31st of March a large heap of hay was removed from the spot where it had been placed exactly a month and four days previously, and the hen was found to have been buried underneath the load. The poor bird was in a shockingly weak condition, and apparently almost lifeless, her comb being quite black; but food and water having been given to her, she speedily showed animation, and now looks very little the worse for her long fast.—(*Surrey Advertiser*.)

### DUDLEY COLLIERY POULTRY SHOW.

THIS was held on the 6th inst., when the following awards were made:—

COCHIN-CHINAS.—Medal and 3, J. Webster, West Sleekburn. 2, J. Dodds, Nedderton Colliery.

BRAHMA FOWLS.—1 and 2, W. Swann, Bedlington. 3, R. Shield, Swallow, he, Gillis & Anderson, Seghill.

SPANISH.—1, R. Shield. 2, G. Scott, Dudley Colliery. 3, M. Gibson, Woodhorn, Morpeth.

GAME.—Black-breasted.—1 and 3, R. Sharp, Cowpen Colliery. 2, J. Stark, Bebside Colliery. he, T. Dodds, Seaton Burn. Brown Reds.—Medal, T. Young, Cowpen. 2, C. Smith, Dudley Colliery. 3, J. Ferry, Cowpen. Any other variety.—1, J. Morton, Choppington Colliery. 2, G. Taylor, Bedlington Colliery. 3, J. Brown, Seagill.

HAMBOURG.—Silver-splangled.—1, G. Stalker, West Sleekburn. 2, G. Turnbull, Ashington Colliery. 3, W. F. Jenkins, Dudley. Golden-splangled.—1, T. Marshall, Mitford Vicarage, Morpeth. 2, Miss M. Stewart, Dudley. 3, A. Harburn, Bishop Auckland.

HAMBOURG.—Silver-pencilled.—1, J. Wilson, Shankhouse. 2, R. Blackburn, Choppington. 3, J. Parker, Dudley. Golden-pencilled.—Medal, A. Stephenson, Dudley Colliery. 2, W. Stephenson. 3, Gillis & Anderson.

BANTAMS.—Game.—Black-breasted and other Reds.—Medal, J. Short, Bedlington. 2, Miss M. J. Nelson, Cockshaw, Hexham. 3, H. Sharp, Bebside Colliery. Any other variety.—1, Miss M. J. Nelson. 2, T. Rennison, Seaton Delaval. 3, T. Golithly, New Delaval.

BANTAMS.—Any other variety.—1 and 3, R. H. Ashton, Mottram. 2, Miss M. Parsons. Cock.—Any variety.—1, J. Short. 2, H. Ashton. 3, G. Bell, North Seaton Colliery. he, J. Wilkinson, Bedlington Colliery.

ANY OTHER VARIETY.—1, M. Gibson. 2, W. Swann. 3, R. H. Ashton. he, R. Parsons. G. Alderson, West Hartlepool.

ANY VARIETY.—Hen.—1, A. M. Balmer, Bishop Auckland. 2, W. Swann. 3, G. Taylor, Bedlington Colliery. Cock.—1, R. White, Cockshaw, Hexham. 2, J. Ferry. 3, T. Dodd, Seaton Burn. he, A. Stephenson, Dudley Colliery.

SELLING CLASS.—1, Miss M. J. Nelson. 2, R. Sharp. 3, E. Walker, Hexham. he, J. Parkinson, New Delaval. C, R. Parsons.

DUCKS.—Any variety.—1 and 2, Miss M. J. Nelson. 3, W. Swann. he, J. Curtis, Dudley.

CHARCOAL FOR POULTRY.—Fowls of all kinds are very fond of charcoal, and will eat it with great relish if properly prepared. Pounded charcoal is not in the shape in which fowls usually find their food, and consequently is not very enticing to them. To please their palate the charcoal should be in pieces of about the size of grains of corn, and if these are strewn around their quarters they will readily eat thereof. Corn reduced to charcoal, and still retaining the perfect shape, is eaten by them, and makes a marked improvement in their health, as is shown by the brighter colour of their combs, and their sooner producing a greater average of eggs to the flock than before.—(*Boston Cultivator*.)

### THE QUEEN BEE.

WHAT a volume of interest and marvel we should have in a full and accurate record of the birth, character, and career of a queen bee! But who can write it? Possibly it may be for the pen of a ready writer to portray the circumstances of birth, the character and the life of a human king or queen; but when the majesty and activity of bee life are considered with a view to unfold them, every humble honest historian must be convinced that the subject is beyond his powers, and fear that in touching it at all it will suffer and be dwarfed to some extent. Though I have, perhaps, seen and handled more queen bees in my day and practice than any other person in these islands, and have followed the destinies of many of them from their cradles to their graves, I have no pretensions to a wider or more accurate knowledge of queen bees and their natural history than is possessed by very many other apirians. In stating a few things known about queens, the aim is to help and interest young bee-keepers and uninformed people.

A queen bee is cradled and hatched in a royal cell—a cell very differently constructed from either drone or worker cells. A royal cell is nearly as large as a small acorn, and not very unlike one in shape and appearance. All the drone and worker cells are horizontal, and built together with great architectural skill and neatness, and with great economy in wax; whereas a queen cell is vertical in form, clumsy in construction, its walls being comparatively as thick as those surrounding the crowns in the Tower of London. A queen is reared and hatched with her head downward. Though the queen's cell is much thicker than either worker or drone cell, she comes to perfection from the egg a week sooner than a worker, and ten days sooner than a drone. One of the most wonderful things seen in the economy of a bee hive, is the fact that a queen bee is reared to perfection in fourteen days, whereas a common working bee produced from the same kind of eggs is twenty-one days in the cell: nay, if a hive lose its queen, the bees of that hive take eggs set in worker cells, and place them in royal cells, and there convert them into perfect princesses in six or seven days' less time than would have been occupied in rearing them in worker cells; and the wonder is heightened when we consider that this is done by food and treatment. When an egg is placed in a royal cell, a white-looking gelatinous matter is placed around it; this matter has been termed royal jelly. What it is, where the bees get it, and how they manufacture it, are questions yet to be solved. An investigation into the qualities and differences of the food given to young queens and young workers in their cells would be interesting, especially if the investigation were made with a view to ascertain whether the queens are developed into perfect females by the special treatment they receive, or whether the workers are the receivers of special treatment which dwarfs and renders them imperfect for life, which life is shortened to nine months.

It is interesting to note that when a queen dies, or by reason of age becomes unequal to her important functions, or when her departure with a swarm is contemplated, the bees rear more than one queen—generally three or four, and sometimes six or eight. Provision is thus made against a mishap. Better raise a superabundance of queens than that the hive should be without one. The supernumeraries are of course destroyed and cast out of their hives. After the death or departure of a queen, and before a successor is matured, there is an interval of some days—often about ten days, and during this interval everything goes

on as well as if there were a queen reigning, or a regent in her place.

What a fuss and heraldry are made at the birth of queen bees! The princess that first comes to perfection heralds her claim to the throne by making some unaccountable noises before she leaves her cradle cell. She calls "off, off, off," several times, and being unanswered, and so far as she knows without rivals, she hursts out of her cell, and becomes queen of the hive, uttering sounds more shrill and piercing, somewhat like "peep, peep," or rather "pa-ay, pa-ay—pa-ay" spoken by the human voice. When the other queens come to perfection they bark "off, off, off" in their cells, which barking enrages the first-born—the queen of the community—very much, and causes her to run up and down the hive with murderous intent, bent on the destruction of her rivals and sisters. When the bees wish to swarm they vigilantly guard the cells containing the young princesses, and thus prevent a collision and contest that would be fatal, for young queens fight as ferociously as bulldogs, and with quite as much courage. In every contest between queen bees it is death or victory; no quarter is given or taken. In contests between queens they cross and clasp each other very closely, and then wrestle in the most violent manner. Their stings, which are more crooked or curved, and much blunter than those of working bees, are never used but in these royal battles. No amount of squeezing with the human hands will provoke them to use their stings.

The lives of the queens are so valuable to the community that the greatest provision is made for their safety and preservation. When two swarms are united, the bees doubtless in most instances destroy one of them to prevent a battle. After the swarms have been flung together we frequently find one of the queens surrounded by a hard cluster of bees, termed "a regicidal knot." So firmly are these knots fastened on the queen, that the bees will suffer themselves to be turned over and over like a cricket ball before they will let her escape. The instinct of mercy to both queens is manifested by the bees in the fact of these regicidal knots.

When a few days old, queen bees pass through a season of danger. At that age they leave their hives to meet drones, for they are never fertilised inside the hive. The more drones in their hives, and the more hives kept in the garden or neighbourhood, the more likely are these marriageable queens to find mates when they are out on that errand. Many queens are lost on their marriage tours—they never return. Why, we cannot say with certainty. When a queen is longer out on these errands than is usual, the bees manifest their concern and become uneasy. If she does not return at all they become quite disconsolate, and can do nothing but bewail their loss. Every few minutes paroxysms of grief and disappointment seize the whole community, and then they make a great noise, running round the hive both inside and out in search of their beloved queen. This lamentation and woe are not to be wondered at, for the poor creatures are in a most hopeless condition—they have no eggs in their hive from which to rear a queen. They will gladly accept a queen of any blood now, and cast aside all notions of an hereditary monarchy. Nay, let them have only a few eggs, and they will at once set them in royal cells and hush themselves into a state of perfect contentment.

Queens go out for several successive days to meet drones, but whether they ever go out to meet them a second time—that is, after impregnation, is a question I cannot answer. But it is well known that when a queen is fertilised and commences to lay she never requires the drone as long as she lives, and we estimate that a healthy fertile queen lays at least 800,000 eggs duly fecundated in the course of her life. Queens that fail to be mated during the first fourteen days of their life remain virgins all their days. Queens that fail to meet drones are valueless, being unproductive. They lay a few eggs only, which hatch into drones.

Now we come to the fertility of the queen. Many young folk fancy that the tragedy of life will be over when their bridal cakes will be broken, whereas in most cases the tragedy and tussle of life are but beginning then; and so when queens have been mated they commence the tussle of life; and, oh! what a life-long toil is that of queen bees. Queens of their hives, mothers of all their populations; for four years laying in the summer season at least two thousand eggs a-day! Some trustworthy experiments have indicated four thousand and six thousand eggs per day each queen. We are within the margin at two thousand eggs per queen per day in the height of the season. What prodigious fertility! How exhausting and toil-some her life! What generous feeding is necessary to keep-up her strength! At what time and how long does she sleep? Who says she sleeps at all? How can she find time to sleep if she lay from two thousand to four thousand eggs in cells in twenty-four hours? But really, does she both lay and set her eggs in the cells? Most writers think and assert that she is not assisted by the bees in this work. We differ in opinion from almost everybody else on this point, and believe that the bees do assist in the distribution and setting of the eggs laid by the queen,

for she frequently lays two and three eggs in one cell, the supernumeraries are removed by the bees, and we think set in unoccupied cells. Besides, a queen has not power to retain her eggs, they come so fast. If placed on the broad side of an empty comb the eggs may be seen falling from her as she moves over it, and sometimes eggs fall from queens as they leave their hives with swarms. And who has not seen and admired in a unicomb the vigilant attention of the bees attending the queen as she moves about the hive? Three or four of them have their heads towards her abdomen, apparently watching for and catching the eggs as they drop from her. When the bees have gone over the cells in which the queen has been depositing eggs, we find that every cell has an egg, and one only; we therefore come to the belief that the bees help in the distribution of the eggs, and we all know that bees take eggs from worker cells and set them in royal cells when they wish to raise queens.

Does a queen then govern her subjects? So far as queen and working bees are concerned no government is needed. No human monarch had ever more loyal, dutiful subjects than a queen bee. Her people adore her, study and provide for all her wants, remove every pebble out of her pathway, vigilantly wait upon her night and day, will fight in her defence, and pine and die if they lose her. A queen lives four years, and she becomes slightly darker in colour and slower in her movements every year. When old age and incapacity come upon her, as they fortunately do in summer time, the bees prepare for her death by setting eggs in royal cells. But sometimes she lingers longer than expected, and the bees are compelled to cast her out alive. If she crawl back into the hive they cast her out again, but abstain from killing her. It is a melancholy end to a useful life, causing a pang of sorrow to all right-minded spectators. The value of a queen in a hive is seen in the practice of dethroning an old one in her dotage, and providing, while it is possible, a successor to the throne.—A. PETTIGREW, *Salce, Cheshire.*

THE ILLUSTRATED PIGEON BOOK.—The first number of this has been published; and as the practical portion is contributed by Mr. Fulton and the illustrations by Mr. Ludlow, it may be expected to be a worthy companion of "The Illustrated Poultry Book."

#### MR. PETTIGREW ON HONESTY AMONG BEE-KEEPERS.

In your number of April 2nd Mr. Pettigrew writes as follows:—"The teaching of experience will lead all honest practical apiarians, seeking great results, to use straw hives of simple construction, large size, and beautiful build." I have been connected with THE COTTAGE GARDENER and JOURNAL OF HORTICULTURE from its earliest days, and have been a writer on bees and bee-keeping in its pages almost from the first, and continuously up to the present time. It is well known to all my old friends that "the teaching of experience" led me many years ago to discard straw and to adopt wooden hives as in every respect preferable. I leave them to say whether I am an "honest practical apiarian" or not. Let Mr. Pettigrew "use and recommend straw hives of considerable dimensions:" no one will question his perfect right to recommend what he has found practically most useful, neither will anyone doubt his perfect honesty in so doing; but good taste, to say the least, should lead him to abstain from questioning other people's honesty when they use and recommend other hives, and believe from their own experience, as I do, that wooden hives, if not cheaper at first, are cheaper in the end, and "better for health and honey, and more easily managed than" straw hives.—B. & W.

THE GREAT YARMOUTH POULTRY SHOW.—At the next Show, to be held December 16th and 17th, a class is to be provided exclusively for the improvement of poultry-breeding by farmers and cottagers, which is no doubt very much needed in this country. It is the object of the Great Yarmouth Poultry Association to induce them to breed a good fowl for both table and laying purposes by making a class for Dorkings (cockerel and pullet) hatched in the present year, price not to exceed £2 per pair; and they propose offering prizes of £2, £1, 10s., and 5s., providing the entries number twenty. By this means they hope that the sales will be numerous, and that the purchasers will be almost exclusively farmers and cottagers. The entry fee for this class will be 4s.

#### OUR LETTER BOX.

BLACKBURN POULTRY SHOW.—"JUSTICIA," a successful exhibitor at this Show, held early in January, has made two applications to the Secretary for the prize money awarded. These communications have passed unheeded. Proceed against the Secretary in the County Court.

BROMLEY POULTRY SHOW (F. C. Hassard).—We will keep your letter, and publish it if necessary, or even the whole of the previous correspondence with the Secretary; but the facts of the case and the judgment with costs in your favour tell the true tale, and the public appreciate it.

**PALE-YOLKED EGGS (H. H. F.).**—It must be a mistake. We cannot think there is a large village, much less a town, where barley meal cannot be had. We have always heard, and our experience justifies us in believing it, that the yolk of new-laid eggs is paler than those that have been laid some days. It is very likely that, as your pullets get older and the weather gets warmer, the yolks will be darker. The eggs will be no better. Your feeding is very bad. Substitute meal for barley; discontinue the cabbage leaves and sharps. You may continue the boiled meat, and may give a very moderate meal of maize on the days when you give no meat.

**PARTRIDGE AND GROUSE COCHINS (A Subscriber).**—Ours answer to your first question, "How do they differ?" is—

"The only difference we see  
Is 'twixt tweedledum and tweedledee."

Secondly, the legs should be yellow, especially in the cocks. As the birds get older the legs become paler. Thirdly, vulture-hocked means having strong feathers growing above the knees, but projecting from it backwards and downwards. Such birds should be put into the stockpot.

**BARN FOR FOWL HOUSE (L. M.).**—Leave the floor as it is, unless you add to it some chalk, clay, and gravel, and have it rammed hard down. You must explain the size and the nature of the run the birds can have. You need not take any measures against the rats. Let your perches be within 2 feet of the ground, and made of fir or other poles 14 inches in circumference, sawn in half, and laid on ledges or props. The round side should be uppermost, and the bark should be left on the wood. You can make some laying boxes by fastening pieces of wood against the wall, or, better still, you may have them quite moveable. A box 2 feet long and 1 foot deep, divided in the centre, and open in front with the exception of a 2-inch head, will serve for fifteen hens to lay in. If your number is larger have two such.

**CRÈVE-CŒURS (W. E. Cave).**—Many persons write of breeds they have never kept. We assert, as we did before, that Crève-Cœurs are great wanderers.

**GROUND OATS (Fen).**—Oatmeal and ground oats are not equally good for fowls. Mr. Agate, Slaughman Mills, Crawley, Sussex, sells ground oats, and we have had very good ones from a dealer in Kingston. We think his name is Marsh, and his address Market Place.

**TURKEY SITTING ON TWENTY-TWO EGGS (Dark Brahma).**—If the Turkey is to come off at the same time as some hens you will have no difficulty in making the latter take to all the chickens, but you may have difficulty if there is difference in age. It is possible to rear them without a mother by putting them every night in a basket lined with flannel, and stuffed between the wicker and flannel with hay. This must be put in a place where there is no draught at night, and the chickens must be fed at daybreak. Such generally grow up more or less deformed. You cannot keep eggs in the way you name. They must be from contact with air. We keep ours in slaked lime, and they do well.

**CHICKENS WITH LEGS EXTENDED SIDEWAYS (H. F. H.).**—Artificial mothers for chickens are like baby-farming for children—mere apologies for the real thing. We wonder more are not similarly affected. We have seen thousands of chickens reared in this way years ago, and it was painfully evident with them all that something had gone wrong with them. Some carried their heads on one side, some were double-jointed, many were humpbacked, and the successful were small and attenuated though old. All you can do for them is to give them nothing but good beer to drink, and to feed on chopped egg, chopped cooked meat, bread and milk, and bread and ale. Feed the last half hour of day, at night, and the first in the morning.

**PRESERVING EGGS (J. W.).**—We preserve the eggs when in great plenty, and they keep till the time of year comes round again. The most important point to observe is, they must be put away fresh. Take a vessel—we use a bread-pan; cover the bottom with slaked lime of such consistency that the eggs will remain in the position in which they are placed; fill the lime as full as it will hold them upright on their small ends. When it is full cover over with slaked lime deep enough to hold another layer, and so on till the pan is full. The surface must then be made good and carefully covered, no egg being visible. By this plan we have always a good supply of eggs all the year round. They are excellent for all culinary purposes, and by no means to be despised on the breakfast table, though they may have been some months in lime.

**OLD MORTAR (A Would-be Fowl-fancier).**—It is one of the best things you can have in your poultry run. It is a good arrangement to have some mixed with sand or coal ashes, and a heap kept dry under a shed for the fowls to huck in.

**SUITABLE PIGEONS FOR A LOFT (Julius).**—We recommend you to keep only one variety of Pigeons in your loft, the dimensions of which you give us. Runts are best kept on the ground floor in a shed or out-house of any kind, as they are too heavy to fly high. Fantails would do, but they are also best kept low down, and where they cannot catch the wind. We think high-flying Tumblers would suit you, or Antwerps.

**ANTS IN HIVES (C. H. E.).**—We do not think that either lime or soot round the posts of your hives will keep the ants from entering. Gas tar painted on the posts would probably answer. A gutter of water, however narrow, would protect the hives from ants. As their nest is under the walls of your green-house, you may destroy thousands of them with saucers of treacle placed nearer to them than your bees. By-and-by your hives will become full of bees and have plenty of sentinels at the doors.

**BROKEN COMBS (J. O.).**—If you were to examine your hive you would ascertain the cause of the broken combs which the bees carry outside. A comb may have fallen, or mice may have been amongst the combs inside; but when bees build combs in autumn from syrup supplied in abundance, they generally make the cells twice their usual depth. As your hive had its combs built in autumn from sugar and water, the probability is great that the broken combs you see are merely parts or parings of the cells which the bees have cut off in reducing them to a proper depth (about half an inch) for breeding purposes.—A. F.

**ADDING A LIGURIAN QUEEN (S. A. B.).**—Neighbour & Sons, Regent Street, import Ligurian queens for sale. The usual mode of introducing them to stock hives is first to deprive the stocks of their present queens, and two days after to give them the Ligurians; and sometimes the Ligurians are placed in wire cages, and thus introduced. The cages are to prevent the bees killing them when they first meet. After they have been caged amongst the bees for twenty-four hours the cages are removed and the queens left. When the bees of a hive are mourning the loss of their own queen they will gladly receive another if wisely introduced. By strongly scenting the hive with nutmeg or mint at the time of the introduction of foreign queens, no fear need

be entertained that they will be killed by the bees of queenless hives. The prices of Ligurian queens vary, and may be ascertained of the dealers.

**COMBS INJECTED—CRYSTALLISED HONEY—EXTRACTOR (An Obligated Subscriber).**—The combs from which you drove the bees last year, and which you say are being pulverised by animals, are not eligible for guide combs. Honey is marketable in a crystallised state among people who know genuine honey from that which is manufactured; but if you find it otherwise in your neighbourhood you can easily liquefy it, and thus make it limpid, by the application of heat. A jar of candied honey placed in an oven soon becomes transparent and liquid without detriment to the honey. Your honey-extractor which you describe is, like many others, not satisfactory in its work. Having invented and made it yourself, you are more likely to be able to improve it than we are, for we have not yet seen one that performs its work in a satisfactory manner. It is yet to be proved that the American slinger containing the latest improvements will be of any advantage to the bee-keepers of this country. Our hunger for evidence on this point has not yet been satisfied.

**HEATING A RABBIT HOUSE (C. E. A.).**—For so small a house a gas stove would be best, with a tube to carry the fumes into the open air or adjoining chimney.

**OREYHOUNDS (A. Atkins).**—Meyrick's "House Dogs and Sporting Dogs" will suit you. It gives full information on the topics you mention. The price is small. Published by Mr. Van Voorst.

#### METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barom. at 9 a.m. at Sea and level.	Hygrome- ter.		Direction of Wind.	Temp. of Sol at 1 ft.	Shade Tem- peratures.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.
Th. 2	30.061	48.9	45.9	N.W.	46.8	57.3	37.8	105.3	65.9	0.012
Fr. 3	29.696	53.4	49.0	S.W.	47.8	57.2	46.8	74.6	65.9	0.150
Sat. 4	29.298	51.1	45.3	N.W.	48.3	56.6	47.8	104.5	44.2	0.125
Sun. 5	29.499	44.8	42.2	W.	46.8	47.8	37.2	73.0	34.2	0.242
Mo. 6	29.526	45.5	42.8	N.W.	45.8	56.5	40.4	104.2	39.2	—
Tu. 7	29.759	45.6	42.8	N.W.	45.8	58.4	38.5	109.2	28.9	—
Means	30.040	49.0	44.0	W.	46.7	60.4	34.1	109.8	29.1	0.014
		48.2	44.6		46.6	56.3	39.6	97.2	36.7	0.549

#### REMARKS.

- 1st.—Fine but boisterous all day; very fine night.
- 2nd.—Fine morning, but frequent showers, and very high wind during the after-part of the day.
- 3rd.—Wind still high; day moderately bright, but with frequent showers.
- 4th.—Rain at 8 A.M., cold, wet, and windy, some short intervals bright, but on the whole a very uncomfortable day.
- 5th.—Wet early, but cleared off before 11 A.M., after which time it was fair and pleasant.
- 6th.—A most beautiful day throughout, and a very fine sunset.
- 7th.—Another beautiful day, but not quite equal to the preceding one, from the wind being rather colder.

The mean temperature very slightly below that of last week, but greater range, the maxima being higher and the minima lower than during that time. Remarkably persistent high winds during the early part.—G. J. SYMONS.

#### COVENT GARDEN MARKET.—APRIL 8.

MARKETS are much influenced by the holidays, and very little alteration has taken place. New Grapes and Strawberries are more freely supplied, the latter in excess of the demand.

#### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	3	0 to 3	Mulberries.....	1	0 to 0
Apricots.....	0	0 0 0	Nectarines.....	0	0 0 0
Cherries.....	1	0 0 0	Oranges.....	0	0 16 0
Chestnuts.....	10	0 20 0	Peaches.....	0	0 0 0
Currants.....	0	0 0 0	Pears, kitchen.....	2	0 3 0
Black.....	0	0 0 0	dessert.....	3	0 10 0
Figs.....	0	0 0 0	Pine Apples.....	1	0 8 0
Filberts.....	1	0 1 6	Plums.....	1	0 0 0
Cobs.....	1	0 1 6	Quinces.....	0	0 0 0
Gooseberries.....	0	0 0 0	Raspberries.....	1	0 0 0
Grapes, hothouse.....	2	0 20 0	Strawberries.....	0	0 1 6
Lemons.....	1	0 12 0	Walnuts.....	10	0 16 0
Melons.....	0	0 0 0	ditto.....	100	0 2 0

#### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	0	0 0 0	Mushrooms.....	1	0 to 2
Asparagus.....	10	0 10 0	Mustard & Cress.....	0	2 0 6
French.....	12	0 0 0	Onions.....	0	4 0 0
Beans, Kidney.....	10	0 0 0	pickling.....	0	6 0 0
Beet, Red.....	0	1 0 0	Parsley per doz. bunches	4	0 8 0
Broccoli.....	0	9 1 6	Parsnips.....	0	10 0 0
Cabbage.....	0	1 0 1 6	Peas.....	0	9 1 0
Capsicums.....	0	0 0 0	Peas.....	0	8 6 4
Carrots.....	0	0 0 0	Peas.....	0	0 0 0
Cauliflower.....	0	3 0 0	Round.....	0	0 0 0
Celery.....	1	6 2 0	Radishes.....	0	1 0 1 6
Coleworts.....	2	8 4 0	Rhubarb.....	0	9 1 6
Cucumbers.....	0	1 0 2 0	Salsify.....	0	1 6 0 0
pickling.....	0	0 0 0	Savoy.....	0	1 0 0 0
Endive.....	0	2 0 0	Scorzonera.....	0	1 0 0 0
Fennel.....	0	0 0 0	Sea-kale.....	0	1 0 2 6
Herbs.....	0	0 0 0	Shallots.....	0	1 0 0 0
Horseradish.....	0	3 0 0	Spinach.....	0	2 0 8 0
Leeks.....	0	0 0 0	Tomatoes.....	0	0 0 0 0
Lettuce.....	0	1 0 0	Turnips.....	0	0 3 0 0
			Vegetable Marrows.....	0	0 0 0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 16—22, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
16	Tu	Meeting of Royal and Linnean Societies.	57.4	57.1	47.3	27	4 45	55 46	10 5	5 7	1	0 14	106
17	F		58.2	58.8	47.0	15	2 5	57 6	23 5	38 8	2	0 29	107
18	S	Dr. Darwin died, 1802.	56.8	58.0	47.4	16	0 5	59 6	47 5	10 10	2	0 42	108
19	SUN	2 SUNDAY AFTER EASTER.	59.0	55.6	47.3	10	58 4	0 7	14 6	37 11	3	0 56	109
20	M	[ Societies.	60.3	55.1	47.7	17	55 4	2 7	51 6	morn.	4	1 9	110
21	Tu	Meeting of Entomological and Zoological	59.5	57.2	48.3	16	56 4	4 7	42 7	52 0	5	1 22	111
22	W	Royal Botanic Society's Spring Show.	59.0	57.4	48.2	22	51 4	5 7	46 8	47 1	6	1 34	112

From observations taken near London during forty-three years, the average day temperature of the week is 58.6°; and its night temperature 56.6°. The greatest heat was 77°, on the 17th, 18th, and 19th, 1834; and the lowest cold 23° on the 17th, 1847. The greatest fall of rain was 0.49 inch.

## WHY SHOULD FRUIT DROP AT STONING TIME?



FRANKLY confess my inability to fully answer this question. I bring it forward merely that observations and notes may be made with a view to solve the problem. Is it from a deficiency of something in the soil? Is it from unripe wood or imperfectly fertilised flowers? insufficient foliage, too much vigour, too much fire heat, or too little light? or is it only Nature's resentment to over-cropping? It is a perfectly natural operation, and its failures ought to be accounted for. It is not creditable to our modern enlightened gardeners to be obliged to have their fruit half-grown before they dare thin it. For my own part I cannot think much good is done to the trees by thinning the fruit after the stoning is completed, as there is then no more hard work to be done. If one leaves all the blooms to see which set best, and all the fruit to see which go through the stoning process best, why not wait another stage, and see which ripen best? It is only a question of a little extra feeding, and fruit trees will bear an abundance of that when the fruit is half grown, if the foliage is healthy and the crop a heavy one.

According to my own observations the fruit is not so likely to drop when the crop is a moderate one as when it is either too light or too heavy, nor with out-door trees as with those which are hard forced, nor with trees of moderate age which make growth of regular and moderate size as compared with those which are young and vigorous, and which make some shoots much stronger than others, especially if such strong shoots be hard pruned in winter.

I am of opinion that insufficient thinning of the shoots in summer, and consequently imperfect ripening of the wood, dryness at the root in winter—not bearing in mind that the roots of the Plum tree and its allies are always in action before the upper part of the tree—a quantity of vegetable manure in the border, too late pruning, too soon disbudding, and too late thinning of the fruit, all tend to cause the fruit to fall at stoning time. Winter and spring pruning should be abolished from our fruit gardens for ever. Excepting newly-planted trees no pruning should be done after November, and only then such as cannot be done earlier, as branches which have borne fruit and are not again required, and unripe shoots. All thinning which can be done should be completed as soon as the fruit is gathered, while the leaves are healthy and have the power of curing the wounds, and also to enable the light and air to reach better the remaining shoots. It is quite a mistake to leave the pruning of Peach and other trees till just as they are coming into bloom; it does not retard them one hour, and it must do them an incalculable amount of harm.

I believe I am right in saying that trees in a perfectly healthy state, and which are not overcropped, get through the stoning process more quickly as well as more safely than those which are not in so good a condition. It is more difficult to tell when they are stoning, they hardly seem to stand still at all. I am positive I have known one or two Vines of which the fruit kept swelling all the time it was stoning. It is also a fact that it is not the most forward fruit which falls at stoning, but that which is comparatively small and late, and has allowed the forward fruit to appropriate all the good things to itself. As a rule, too, I think the fruit that falls has not commenced to form the hard substance at all.

Disbudding is often done too soon and too much at one time; it should not be commenced till the petals have fallen, and then it is better to do it very gradually, going over the trees several times. I think, too, the shoots immediately before the fruits are often stopped too closely; it is better to allow them to grow 3 or 4 inches, and then afterwards a leaf or two can be spared from the base, so as to admit light to the fruit. It is not enough to admit light to the fruit just before ripening time, they should always have light; some of the higher-coloured Nectarines will show the benefit of this before they are half-grown, being of a darker colour and hardier-looking than those which are grown in comparative shade. They always retain their superiority, colouring before they are really ripe, and having a flavour as superior to those grown in the shade as the latter have to a Turnip.

When the stoning is fairly over all useless branches should be cut clean out of Peach and Nectarine trees, and the shoots for fruiting the following year should be well cared for. Those having the fruit on may be tied in any conceivable way to get all the light and air possible; it is only the fruit to be cared for on these now, as the shoots will be cut away as soon as the fruit is gathered.

—WILLIAM TAYLOR.

## HEATING BY LIME-BURNING.

I HAVE read with interest the various articles which appeared in the Journal for the last year bearing on fuel and the different modes of heating horticultural buildings; for since coal has risen to such a price it behoves every gardener to apply himself to ascertain as far as possible not only the best and cheapest fuel, but also the best and most effective apparatus. I have had considerable experience in various forms of heating apparatuses, and it may interest some of your readers to hear what I have to say on the subject. I will confine my remarks to those I have in use at this place.

First, there is an ordinary saddle boiler, which heats a span-roofed house. This is a sort of mixed greenhouse, so that the boiler is not much used, except in winter. The next is an upright tubular boiler heating another span-roof, but it is in use almost all the year round; it is a stove, Melon house, and greenhouse. Both these boilers answer the purpose for which they were intended, except the common complaint—waste of fuel, together with the uncertainty of heating and all the other incidents and accidents connected with careless stoking.

My chief remarks refer to my third and last, though by

no means least, apparatus—it is that described by Mr. Robson, in your issue of the 2nd inst., as “a boiler heated from a fire which also acts as a sort of limekiln;” and he adds, “I shall be much surprised if a year or two do not consign it to neglect, if not oblivion.” I can assure Mr. Robson if he saw the apparatus working he would not speak so lightly of it, and I often wonder that any practical man could have any doubts about it. The very fact of a good saddle boiler being on the top of a red-hot limekiln ought to convince even the prejudiced of its heating powers; and for the benefit of such of your readers as have not seen it, or have had no opportunity of judging of its merits, I will state some facts which I consider prove it superior to all other apparatuses yet invented.

Our apparatus, being on a small scale, requires attention—i.e., drawing and charging twice in the twenty-four hours, but only twice—once in the morning and once in the evening, and this occupies about an hour each time, and is done by an ordinary labouring man. Thus, in the first instance it is superior to any other system—namely, effecting a saving of time and labour, and affording an absolute certainty of a steady heat, for when it is charged in the morning the gardener need never look at it through the day, and when charged in the evening he may rest quietly on his bed, and have no fears about the heat of his houses. In the next place it is superior to any other system in point of economy, for other systems are a heavy tax, but this is no expense. I imagine some will ask, “Does anyone mean to say that a large range of houses can be heated free of expense?” Yes, it is an accomplished fact, and in some cases there may be a considerable profit besides. In a locality where culm is cheap and limestone at hand, the lime that is burned will pay for culm and labour, and show a considerable balance in favour of the system. Of course, where culm is dear and limestone to be brought a long distance, the result in point of economy will be in proportion.

The following statement will show the result of our experience since the apparatus was erected.

From Dec. 18th, 1873, to April 10th, 1874.

	£	s.	d.
Quantity of lime burned 360 barrels, valued at 2s. per barrel..	36	0	0
Culm used to burn lime, 18 tons at 12s. 6d. ....	11	5	
Carriage of culm .....	11	5	
A man's time, including a horse to draw limestone, } about 9s. per week .....	7	13	30
Balance in favour of apparatus .....	£5	17	0

Our new range, which is heated by Mr. Cowan's system, consists of a conservatory, three vineries, and a Peach house—in all 100 feet long, and was erected by Messrs. Boyd, of Paisley; and the whole, including the heating apparatus, is much admired by all who have seen it.—THOMAS CLARKE, *Gardener to Lord Clanmorris, Creg-clare, Ireland.*

### GLEICHENIAS.

I REJOICE to find from “EXPERTO CREDE's” letter in our Journal of the 9th inst., that I am personally known to him, and I assure him that he will receive a hearty welcome at my house whenever he may honour me with a visit. He will, I hope, see not only the *Gleichenias* to admire, but a really fine collection of Ferns, British and exotic. I am just now removing them all from my late to my present residence, and I hope in a little while, with your kind permission and indulgence, to write for some of the readers of “our Journal” interested in the culture of my favourites, a description of my new ferneries, their style, proportions, mode of shading, heating, and form of construction generally, with an account also of their contents, which will, I trust, be of some little interest to all, and of use to some of your readers.

I think that a considerable difference exists between my compost for these grand plants and that recommended by our friend your correspondent. I use no peat whatever; good, strong, fibrous loam (not light and sandy) and a little leaf mould. It is the peat that I dislike, as I do not think it good for them. I am afraid my views on a cool fernery and a warm greenhouse differ rather from those of “EXPERTO CREDE.” I call a warm greenhouse a kind of stove, or approaching it at any rate. Take *Gleichenia flabellata* for an example. I grew it last year with my British Ferns—no heat at all beyond what a flow-and-return 2-inch pipe could give on the north side of the house on a damp or very cold day, and there it flourished amazingly, defying those villainous thrips which are the great enemy of all Ferns, and expanding its fine glossy

fronds in all their beauty. I shall do the same this year. That treatment I call decidedly cold. My large specimen of *rupestris* is now growing in the same house with my plants of *Adiantum farleyense*, *Davallia Mooreana*, *Gymnogrammas*, &c. This is true stove heat, and some of my other *Gleichenias*, *microphylla*, *dicarpa*, *heciostophylla*, and *spelnœa* are in another house several degrees cooler. This I call a warm greenhouse. A cold and a cool fernery are with me identical, and I always so speak of them.

I should like “EXPERTO CREDE” to come here about a week before the Manchester Show if he could manage it, and to stay with me till he is tired. Possibly I may meet him at the sale of Mr. Micholls' plants the end of this month.—T. M. SHUTTLEWORTH, F.R.H.S., *Howick House, Preston.*

### NOTES FROM MY GARDEN, 1873.—No. 7.

#### ROSES.

I HAVE already mentioned, in speaking of the soil of my garden, that while it is suitable for most of the things that I grow, it is not so suitable as I could wish for Roses; and indeed, were it not for that admirable stock the *Manetti*, I should not be able to grow them at all. The *Briar* would not live long or do well in the light rich soil which I can appropriate to my Rose garden, and I am therefore one of those who “go in” for *Manetti con amore*. The “howl,” too, to which I have given utterance more than once on the subject of orange fungus will show that I have met with discomfiture in my attempts to grow them; but this I have shared in common with many whose soil is of a very different character to mine, and I can therefore hardly attribute the invasion of the enemy to that cause.

I am not able, owing to a limited space, to grow more than six hundred Roses, and these are planted in beds 30 feet long and 4 feet wide. Besides, I have a bed of 20 feet square, and a border of about 80 feet, with a double line of plants. From these some are weeded each year, and some are added to them as new varieties establish their claims to recognition; and this cannot be, except in rare instances, until the second year, for a Rose must be a very good one indeed that can, after the incessant propagation to which it is subjected, be sufficiently good to make its mark on its first introduction, and it is utterly useless to trust to the descriptions given by the introducers. Of course I manage to grow all the most favourite kinds, and in our more southerly climate the Tea Roses do tolerably well in the open ground. I have, however, a few against the low wall of my greenhouse outside, and against my house have *Cloth of Gold*, *Rêve d'Or*, *Maréchal Niel*, and *Solfaterre*. The first of these gave me some splendid blooms, and it gives promise of a good show this year. The plant is young, but is making rapid progress budded on the *Manetti*; it is, however, a mere baby in comparison with one on a friend's house in my parish, of which I hope to say something when it is in bloom. Mine has received no particular treatment, and its blooming freely is one of those freaks which characterise it. The growth of *Rêve d'Or* has been something marvellous. It has in the course of three years completely clothed the side of the house where it is, and its growth is entirely different from other *Noisettes*. Instead of long dangling branches, it throws out all over it a multitude of shoots, and most of these carry buds. I cannot understand the complaints that have been made by some Rose-growers as to its not blooming freely, for I had a very large number. *Maréchal Niel* is only just planted. One I had was so injured by excessive high winds that I had to discard it and place a younger plant instead. *Solfaterre* has been planted at the front of the house facing west, and bids fair to cover it well.

The light soil of my garden, rich though it is, requires some addition in the way of clayey loam. It is a difficult matter to manage here. I have this year added some, but it is, I fear, of too light a nature to do much good. The invasion of orange fungus occurred just after the Roses had bloomed. The spots soon made their appearance; the whole plant became infected, and then the foliage dropped off; and nothing could possibly present a more desolate appearance than the beds did at a time when they ought to have looked luxuriantly green. I found in my going about last year that in different parts of the country the same complaints were made; for by Mr. Camm in the far south, Mr. Fish in East Anglia, and by growers in the north the ravages of orange fungus were mourned over. In order to try and stop its ravages I this winter have given my bushes a good coating of lime, and have this spring tried

one piece by giving the trees a painting with the same composition that I use for my Vine. Time will show whether these preventives will succeed or not.

The very useful election of Roses which Mr. Hinton was good enough to undertake has made it quite superfluous for me to add anything on choice of sorts. In the list that I forwarded I included such sorts as I had found to do best here; and with regard to a recent controversy, I may say I do not hold the very high opinion some have of Edward Morren. I have not seen one bloom in a dozen perfect, although it is a fine *Rosa* when caught in good condition. There is one thing, however, I would say—that I do not think it well for general purposes to confine oneself to what are termed exhibition Roses. There are many which are brilliant in colour and free-flowering that for garden ornamentation are unsurpassed, but which would rarely if ever figure in an exhibition stand. I too, like to have the common *Roses* I so well remember in my younger days—the *Rosa de Meaux*, *Crested Provence*, *White Bath Moss*, *old Cabbage*, &c. Pretty in themselves, they are connected with associations one would not willingly let die out.—D., *Deal*.

### EXHIBITING HYACINTHS.

MR. DOUGLAS is, I think, entitled to the thanks of all who take an interest in flowers for his manly letter on the practice of tying two spikes of Hyacinths together so that they look like one. Some of the Hyacinths recently exhibited at South Kensington reminded me of George Colman's amusing lines in "Lodgings for Single Gentlemen."

"Will Waddle, whose temper was studious and lonely,  
Hired lodgings which took single gentlemen only;  
But Will was so fat he appeared like a tun,  
Or like two single gentlemen rolled into one."

Like Mr. Douglas, I condemn the practice of rolling two or more single spikes into one, because it appears to me calculated to deceive. I admit that it is not contrary to the written law, but it is against the law of honour, which Englishmen of true and honourable feeling consider themselves equally bound to observe. It is more mischievous in its results than buying plants immediately before a show with the view of exhibiting them, because in this latter case, if the rules of the exhibition allow it, you only appropriate another man's skill, which it is fair to presume he is willing to part with for a consideration; whereas in the former you lead the public mind astray as to the nature of the things exhibited.

We heard a good deal a short time since of the falling-off in the taste for florists' flowers. I believe the two fundamental causes of this to be—1, Florists' flowers were so "dressed" at the flower shows that purchasers never could obtain any approach to them in their own gardens, and were therefore discouraged or disgusted, according to the view they took of the failure; and 2, The practice of breeding for flowers alone brought into being a race so feeble that the individuals were almost unmanageable, except in the most skilful hands.

But to return to our Hyacinths. Is it right to unite two or more spikes in such manner that to the public eye they look like one? I think not. It may not be contrary to the terms of this or that schedule, but it is sharp practice, over-reaching, and calculated to mislead. "But," say the advocates of the practice, "you all 'dress' your Hyacinths; and if you 'dress' your pets your way, why should not I be allowed to 'dress' mine my way?" It seems to me a question of "dressing," which it is well known I have always been opposed to. I believe it keeps many a man of high ability and honourable feeling from entering the lists as a competitor, and consequently many fine examples of horticultural skill are lost to the general public.

But it is said, "You must 'dress' flowers for exhibition, and if you allow 'dressing' at all you cannot limit the extent of it." Now, is this reasoning sound? I have heard it said that no Act of Parliament was ever framed that a skilful lawyer might not drive a coach-and-six through. Yet Acts of Parliament are framed, and generally, under the ruling of wise and impartial judges, work for the good of the public. If flowers must be "dressed," which I do not admit, the judges might be instructed to award the prizes for horticultural skill *in growth* rather than *in dressing*, and to put back any collections, without positively ignoring them, that were over-dressed. As a working horticulturist I am too intent on my work to be always studying my personal appearance. If I were to put on a superfine coat when at my work I might soil it or spoil it in

an hour; but if I were going from my work to see a friend I admit that I should wash, and brush, and put on good clothes, but I should not pad or paint. Now, if "dressing" must be, I would say, "Wash and brush, tie-up and arrange, but do not pad or paint." A distinction of this kind might, I think, be drawn, if not by the wording of a schedule, by the knowledge and acumen of the judges at our flower shows. It is well known that as matters at present stand no great success can be attained without a considerable amount of padding and painting.

As a last word, I would say to purchasers, Do not draw your conclusions from what you see at flower shows, but from gardens and nurseries, where you may see large quantities of the same thing in a natural state.—WM. PAUL, *Paul's Nurseries, Waltham Cross*.

### PROXY-VOTING AT THE ROYAL HORTICULTURAL SOCIETY.

THE Journal is always open to all views on all horticultural matters, so I ask for room for mine on male proxy-voting. I think we may assume that the Royal Horticultural Society will not always be, as it is at present, a Society which the majority of its Fellows have joined in order to get the use of a cheap private recreation ground for their families, but that it will consist in a larger part of horticulturists of all ranks, who belong to it mainly in order to promote horticulture. When this good time comes we shall have many more Fellows residing in distant parts of the country than at present. They will take a warm interest in the Society's doings. We shall not have very much to give them in exchange for their subscriptions, and a journey to London in order to vote would be a heavy tax. I think to make a real working Society embracing the whole country we must have vote by proxy, and trust that all good horticulturists will come round to this way of thinking before the meeting at which the subject is to be again considered.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath*.

As a country Fellow I quite agree with every word you have said about voting by proxy in the Royal Horticultural Society. These local questions, which have for years past agitated the Society, have no interest for us country Fellows, and we have neither time nor inclination to watch the alternate ups and downs of the rival parties. If proxy-voting was in use at this moment, and I were asked by some of your busy people in London for my proxy, I could not for the life of me tell him how I wished him to vote on my account. I consider such a scheme as that which one of the parties (I don't know from which it emanates) is trying to introduce will have but one result, and that is the ruin of the Society. I for one shall withdraw if such a bye-law be passed.—A COUNTRY FELLOW.

WHAT is it all about? Vote by proxy! Who wants to vote by proxy? Is it the country Fellows in whom such a sudden display of interest has manifested itself, who are sighing for this long-denied boon? or is it some clique in London, who wish to use the country Fellows as exhibitors do pretty little marionettes, whom they cause to perform all sorts of interesting manoeuvres by simply working a set of strings? I have known the Fellows of the Society for many years, and never heard any desire expressed for the introduction of proxy-voting. Who, then, is it who is so desirous of promoting it?—J. P., *Hazelhatch*.

WE are summoned by the Council for the 21st inst. to consider, and if deemed expedient to confirm, a bye-law framed by them in compliance with the expressed wishes of a majority of the Fellows present at a meeting held on the 8th of January last, to extend the power of voting by proxy to the male as well as lady Fellows of the Society, *apropos* to which two of our leading horticultural journalists have spoken out manfully upon the subject, and in my opinion given us some sterling advice; offering, too, some suggestions worthy of the serious consideration of every Fellow before deciding upon the course he shall adopt.

I maintain that voting by proxy upon *ex parte* statements, and upon subjects little, if at all, understood until fully discussed and explained at a meeting, can at best be but a most unsatisfactory proceeding. But beyond this, it must be borne in mind that it is open to flagrant abuse, and also that, like a two-edged sword, it cuts both ways; for this power might

become dangerous in the hands of an unscrupulous Council, who could circulate *ex parte* statements, and canvass for proxies fearless of the cost, because at the Society's expense. Again, it might become a dangerous weapon in the hands of a few determined plotters banded together for the object of carrying out some factious opposition to the powers that be, or measures to serve their own interests only, to say nothing of the possibility of its ever answering the purpose of Her Majesty's Commissioners to put forth all their strength to carry through a policy that might be most repugnant to us as horticulturists, and detrimental to the interests of the Society. These are points demanding not only consideration but action on the part of all loyal Fellows of the Society.

The Council, I take it, are acting as mere passive agents in the matter, simply carrying out the expressed wishes of a section of the Fellows; for I gleaned from the remarks made by Lord Bury at the meeting, that the Council were fully aware of the abuses this method of voting is open to, and of the dangers liable to accrue to the Society by its adoption.

There are also other questions that suggest themselves to my mind in connection with the subject. Why should the Society all at once stand so urgently in need of this innovation? If I mistake not, some of its warmest advocates were formerly, and for many years, members of the Council. Why did they not propose it before? It seems to me strange that it should only have occurred to them as necessary to the salvation of the Society after they had thrown up the reins of government.

Again, in what respect does the constitution of the Royal Horticultural Society differ from other scientific societies that it should require this adventitious aid?

Moreover, would not the adoption of proxy-voting be instituting a retrograde movement? Is it not a custom of the past? Useful, doubtless, before railways were, when a Fellow residing, say at Bury St. Edmunds, would, prior to taking a journey to the metropolis, make his will and many more arrangements than one does now-a-days for a trip to New York.

Why was proxy-voting abolished by the House of Lords? Surely it would be more in accordance with the spirit of the times were the Royal Horticultural Society to abolish the custom altogether. It is certainly now-a-days nowhere used, save in commercial circles, where money arrangements are dependant thereon, and then only for voting upon specified matters and questions which have been previously printed and circulated among the shareholders.

My own opinion is, that if this obsolete custom be permitted to become law in the Royal Horticultural Society it will be to it as the last straw put upon the camel's back, and that the day would not be far distant when its very existence would, like the proxy-voting of the Lords, become a thing of the past; and I do not share the confidence of some of my friends that a vigorous and regenerated new Society would immediately spring up from the ashes of the old one.—JOHN DENNY, *Stoke Newington*.

### PRIMULA NIVEA.

In reply to "G. S.," my *Primula nivea* is planted out in a shady and protected border set apart for choice varieties of that class of plant. The soil is simply good heavy loam, and in that it seems to thrive capitally, for the one plant I have commenced flowering more than three weeks ago, and at the present time it has seven trusses of blossom on it.—J. P. W. H.

In answer to "G. S." on how to grow *Primula nivalis* or *nivea*, it blooms beautifully in rockwork nooks in the open here. In one place we have it where the later blooms of *Primula denticulata* growing side by side add to its beauty.

Some birds have a weakness for picking off the blossoms, sometimes even the whole stem. If "G. S." has not a chained cat, worsted threads will keep the birds sufficiently off.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath*.

ORIGIN OF THE NAME OF GREEN GAGE PLUM.—The origin of the name is simply that the Plum was brought into England about the middle of the last century by the Rev. John Gage, Roman Catholic priest, in some way connected with a monastery or conventual establishment in France, I think near Fontainebleau. The laws of that time against Roman Catholic priests were so severe that Mr. Gage lived abroad, but frequently visited his brother, Sir Thomas Gage, of Hengrave Hall, near Coldham, in the county of Suffolk, fifth baronet.

In one of these visits he brought over, from the garden of the monastery, grafts of this excellent fruit tree, which were cultivated in the garden at Hengrave Hall, and soon were spread throughout England. This statement is correct; the writer of this note (aged seventy-six) has frequently heard the story from her mother, whose family were near neighbours and most intimate friends of the Gage family, now extinct—the last baronet dying two or three years since without issue.—F. Z. —(Notes and Queries.)

### ROYAL HORTICULTURAL SOCIETY.

APRIL 15TH.

THE day on which this Show was held offered a marked contrast to that which opened the season—the Hyacinth Show; the wind was due north, and though there was sunshine, the weather was far from genial. The Exhibition, which was held in the western conservatory arcade, was, notwithstanding, of a very attractive character; and though neither *Rhododendrons* nor *Azaleas*, which were the most prominent of the objects specially invited, were over-plentiful, still the magnificent Orchids of Lord Lonsborough and Mr. Williams, the Roses of Messrs. Veitch and Mr. William Paul, and the group of *Clematis* from Messrs. Jackson, were worth a long journey to see, added to which the *Auriculas* were a source of keen interest to many.

The first class in the schedule was that for twelve forced, *Rhododendrons*. The only exhibitors, Messrs. Lane & Son of Great Berkhamstead, staged a group of bushy specimens from 3 to 4 feet high, and fully as much across, and which were covered with fine trusses of bloom. Victor Trouillard, Hybridum Roseum, Verschaffelti, Queen of the West, Hendersoni, and Auguste Van Geert were especially good. A first prize was awarded, and the same exhibitors were also first for twelve cut trusses.

In the nurserymen's class for nine *Cinerarias* Messrs. Dobson and Sons, Isleworth, were first with very well grown and flowered plants of Prince Leopold, rosy purple self; Profusion, rosy purple, white ring, dark centre; and others. Messrs. Standish and Co., Ascot, were second with a group in which were some large, finely-coloured flowers, but deficient in form; Rosalie and Caesar especially good in colour. In the amateurs' class Mr. James, gardener to W. F. Watson, Esq., Redles, Isleworth, was first with finely grown plants, and Mr. R. Marcham, gardener to J. Mitchell, Esq., Coppins, Iver, second. These were larger, but rougher.

Though the Orchids were not numerous, those shown were, with a few exceptions, remarkably fine. Especially was this the case in the amateurs' class for six, in which Mr. Denning, gardener to Lord Lonsborough, Norbiton, stood in the place of honour with magnificent specimens of *Cattleya citrina*, the flowers, eleven in number, very large and fine; *Cattleya Skinneri* with five spikes of splendid-coloured flowers; a fine mass of *Dendrobium Jenkinsii*; *Arphyllum giganteum* with a dozen or more remarkably fine and beautifully-coloured spikes; *Dendrobium Paxtoni* loaded with rich yellow and dark crimson blossom, and the lovely blue *Vanda cærulescens*. Mr. G. Wheeler, gardener to Sir F. H. Goldsmid, Bart., Regent's Park, was second. In the corresponding class for nurserymen Mr. Williams, of Holloway, was first with a fine specimen of the beautiful white and yellow *Cymbidium eburneum*, *Vanda tricolor*, *Aëridea Fieldingii* with five racemes, and several more advancing for bloom; a magnificent specimen of *Dendrobium nobile*, *D. infundibulum* with a score of its white and rich orange flowers, and a grand example of *Phajusa Wallichii*. The second prize went to Mr. Bull, of Chelsea, for a group which included the beautifully-coloured *Cattleya Mendelii*, *Masdevallia Lindeni*, *Odontoglossum luteo-purpureum*, and others.

For nine greenhouse *Azaleas* Messrs. Lane took the first prize with Comet, Stella, Flag of Truce, and Gloire de Belgique in fine bloom, along with others, but having the drawback of presenting a forest of stakes. Mr. Turner was placed second with neat little dwarf standards of *Balsaminiflora*, *Etendard de Flandre*, *Seduction*, *Apollo*, and *Alexander II.* In the amateurs' class Mr. G. Wheeler was first, and Mr. Marcham second.

Of twenty-four hardy spring flowers in pots, Mr. Barker, Exotic Nursery, Tooting, sent a fine group, including *Fritillaria imperialis*, *Orobis vernus*, *Aucuba-leaved Daisy*, splendid pots of *Anhretia purpurea elegans*, and *Primula elatior* Golden Plover, *Doronicum austriacum*, *Triteileia uniflora*, *Scillas*, and *Saxifraga crassifolia*. Mr. R. Dean, Ranelagh Road, Ealing, was second with a neat group of *Primroses*, *Polyanthuses*, *Daisies*, bedding *Pansies*, *Myosotis dissitiflora*, &c.

In the class for fifty Show and Alpine *Auriculas* (open), Mr. C. Turner, of Slough, exhibited in his usual good style a very even collection. Amongst Green-edged flowers *Mayflower* (Traill), was very fine. Grey-edged—Col. Champneys, free and distinct; Unique (Maclean), and Alderman Charles Brown (Headly), a new flower of good quality. Selfs—Charles J. Perry, Blackbird (Spalding), and Bishop of Lichfield, a fine dark flower. The

first prize was awarded to them. Mr. J. James, gardener to W. F. Watson, Esq., Redlees, Isleworth, was second with some good flowers, but the trusses were small.

In the next class, that for twelve Show Auriculas (open), Mr. Turner was again first with Green-edges, Alderman Wisbey and Dickson's Duke of Wellington; Grey-edges, Col. Champneys (Turner), Splendour (Headly), Competitor (Turner); White-edges, John Waterson (Cunningham), Glory (Taylor), Arabella (Headly); and Selfs, Chas. J. Perry, Sylph (Headly), and Crown Prince (Turner). Mr. James was a good second.

In the amateurs' class for six the contest was between Rev. H. H. Dombrain, of Westwell, Ashford, and Mr. James. Mr. Dombrain was a good first with Imperator (Litton), a very pretty green-edged flower; Col. Champneys and George Lightbody, grey-edged; Popplewell's Conqueror, White; and Campbell's Pizarro, a very fine Self.

In Alpines Mr. C. Turner was first with a very good twelve. Chieftain, Beatrice, Nimrod, Selina, Mercury, Ovid, and Brilliant were fine. Mr. James was second, and Messrs. J. Dobson and Son third.

For twenty-four Pansies Mr. Catley, Claverton Buildings, Bath, and Mr. James, Isleworth, took the prizes in the amateurs' class; and in that for nurserymen Mr. Hooper, Widcombe Hill, Bath, was first.

Of miscellaneous subjects in the plant department there was very fine display, and many extra prizes were awarded, which will be found in another column. Messrs. Veitch sent a splendid group of Roses in pots, in which Charles Lawson and Madame de St. Joseph were especially remarkable; likewise a group of Japanese Maples with beautifully and variously cut and coloured leaves. These were grown in a cold house, and are nearly if not quite hardy, but form fine subjects for conservatory decoration. Acer polymorphum palmatifidum and dissectum are very striking, and so is A. atropurpureum, which has also the merit of superior hardiness. From the same firm came also a group in which was a noble specimen of Epidendrum cnemidophorum, and fine examples of Trichoplias and other Orchids; Rhododendrons Princess Alice, white, and Countess of Haddington, bluish, both of the greenhouse class; a beautiful pan of Primula nivalis; a large specimen of Anthurium Scherzerianum, and cut spikes of Ceanothus rigidus, a fine blue.

Messrs. Jackman & Son, of Woking, contributed a grand collection of Clematises admirably bloomed, in which The Queen, pale lilac, and Vesta, white, were specially noteworthy, though the plants were not so large as those of the older varieties.

Mr. W. Paul, of Waltham Cross, had a splendid group of Roses in which Teas Marie Van Houtte, Souvenir de Paul Néron, and Catherine Mermet were finely developed and at the same time delicately beautiful, and may be marked as of the first class. Along with these were numerous fine Hybrid Perpetuals. Mr. Walker, nurseryman, Thame, sent a box of Maréchal Niel, but not of the rich golden hue we are accustomed to, and one of Gloire de Dijon, fine, and other Tea Roses.

From Mr. B. S. Williams, Holloway, came a rich group of Orchids, Palms, and other plants; from Mr. Bull, Chelsea, a collection of Encephalartos and Macrozamia, in which were many noble specimens; and from Messrs. Standish, of Ascot, a group of Cinerarias, Acers, and other plants, one of which, Azalea linearis, had singularly-formed rose-coloured flowers, of which the petals, from their position, more resembled coloured leaves than anything else. The plant is stated to be hardy. Messrs. Cutbush, of Highgate, contributed a collection of Cinerarias; Mr. James, of Isleworth, one of Cyclamens; and Mr. Turner, of Slough, beautiful blooms of Tree Carnations.

Mr. Denning, gardener to Lord Londesborough, besides the fine group of Orchids which he exhibited in the class for these, sent one in which we noticed very fine examples of Odontoglossum roseum, O. Pescatorei, Oncidium leucochilum, Cattleya citrina, and Masdevallia Harryana and Lindeni.

Prizes were also offered for fruit and vegetables, and caused a fair but not large competition.

For two bunches of black Grapes Mr. W. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchester, was first with well-kept Lady Downe's. Mr. H. Harris, gardener to G. A. Ashby, Esq., Naseby Woolleys, Rugby, showed very fair Black Hamburgh, for which he had a second prize. In the class for white Grapes the same exhibitor was first with excellent examples of Foster's White Seedling.

For fifty Strawberries Mr. G. Sage, of the Gardens, Ashridge, was first with very fine highly-coloured Keens' Seedling; Mr. D. Pizzey, gardener, Fulmer, Slough, second with the same variety.

Mr. J. Douglas, gardener, Loxford Hall, Ilford, and Mr. D. Pizzey exhibited Cucumbers, and received equal first prizes. A bundle of very small Asparagus was sent by Mr. E. Clarke, gardener to J. K. Hall, Esq., Sutton, Surrey; it was awarded a second prize.

There was a spirited competition for Broccoli. Mr. E. Clarke was first with Walcheren; Mr. J. W. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston-on-Thames, was second;

and Mr. C. Osman, gardener to The South Metropolitan District Schools, Sutton, Surrey, third. There were other examples staged, of which the best was Watts's Excelsior. This was sent with a dish of Dwarf Kidney Bean Canadian Wonder and a basket of Mushrooms, by Mr. Gilbert, gardener to the Marquis of Exeter, Burghley, Stamford, and all three were highly meritorious productions.

Mr. Jones, Her Majesty's gardener at Frogmore, sent a collection of thirty-seven varieties of Apples, three sorts of Pears, and two splendid Smooth-leaved Cayenne Pine Apples.

A collection of twenty-seven varieties of Apples came from Mr. W. Gardiner, gardener to E. P. Shirley, Esq., Lower Eatington Park, Stratford-on-Avon.

**FRUIT COMMITTEE.**—Alfred Smees, Esq., F.R.S., in the chair. Mr. D. Pizzey, gardener to Sir E. Perry, Fulmer, Slough, sent a box of Cucumbers which was considered like Blue Gown. Mr. Parsons, of Danesbury, sent a dish of Morelles, to which a letter of thanks was awarded. Mr. H. Harris, gardener to Captain Ashby, of Naseby Woolleys, sent a dish of Early Beatrice Peach in splendid condition. The fruit was perfectly ripe, highly coloured, and of excellent flavour. These were considered highly meritorious, and a cultural commendation was awarded. This remarkably early Peach was started into growth on the 1st December, and the fruit was ripe on the 31st of March. Mr. Harris says, "Other sorts, such as Early York, Royal George, and others, with the same treatment are only now (April 15th), just finished stoning. All trees are planted out and fan-trained." Mr. Hudson, the Gardens, Champion Hill, sent a basket of Lady Downe's Seedling Grapes, which had been preserved in admirable condition, and to which a letter of thanks was awarded. Mr. Bennett, the Gardens, Hatfield, sent a dish of handsome Strawberries, to which a cultural commendation was awarded.

**FLORAL COMMITTEE.**—Dr. Denny in the chair. The subjects submitted to the Committee on this occasion were few, but in proportion to their number the certificates were numerous. Messrs. Veitch, of Chelsea, had first-class certificates for Ficus Parcellii, with the leaves finely variegated with white, Oncidium fuscum, and Cattleya gigas. Croton ovalifolium with handsomely marked leaves, Eranthum reticulatum, and some other plants also came from the same firm. Messrs. Jackman and Son, Woking, sent several Clematises, of which Countess of Lovelace, a remarkably fine semi-double lilac blue, and Marquis of Salisbury, single, deep violet purple, had first-class certificates. Lord Gifford, plum-coloured, from Mr. C. Noble, of Bagshot, had also a first-class certificate. A like award was made to Ceterach aureum, a very distinct Fern, shown by Mr. B. S. Williams.

Mr. William Paul sent a group of new Roses. Diana, bright rose, was very promising; and Peach Blossom, pale peach, we expect will prove a first-rate globular flower. Messrs. Paul and Son exhibited Cheshunt Hybrid and Madame Lacharme, both of which have been noticed in previous reports. Messrs. Backhouse, of York, sent a pan of a charming little Pink called Dianthus glacialis.

## INFLUENCE OF FORESTS.

EBERMAYER gives, in his recent work on the influence of the forests, a table of observations showing the temperature of the earth covered by snow during the very cold weather of December, 1871, in Bavaria. The fact has been generally known that snow is the best possible protection against the penetration of frost into the earth, and that it is the natural protection of seeds, young plants, and other vegetation against frost. It is, however, satisfactory to be able to refer to the exact observations made on this subject by Ebermayer; and, as an indication of the extent to which snow does protect the earth, it may be stated, for instance, that on the 8th and 12th of December the temperature of the air at Vienna fell to  $-26^{\circ}\text{F}$  Fahrenheit, while the temperature of the earth beneath the snow was no lower than  $+33^{\circ}\text{F}$ , and 4 feet below it was  $42^{\circ}\text{F}$ . So long as the snow lies the variations of temperature under the earth's surface are very slight.—(English Mechanic.)

## THE APRICOT CROP.

I HAVE here 700 feet of south wall devoted to this esteemed fruit, all covered with three thicknesses of old netting. The three sharp frosts which we had some three weeks back turned the flowers black, and my face a good deal blacker. However, I am no alarmist, and kept still until I could see its real effect, and I am happy to say we shall have a good half crop. The young wood is now coming out strong, appearing to thank the frost for taking off a part of their load, and the fruit swelling fast.

Peaches are not injured at present, and a fine crop is set on

all the trees. Plums and Apples are covered with bloom and bloom-buds, giving us hopes of having a bountiful fruit year.  
—R. GILBERT, *Burghley Gardens, Stamford.*

## GROWING GOOSEBERRIES FOR MARKET AND EXHIBITION.

"A RETIRED MECHANIC" informs us that he purposes to devote an acre, which has been left him by will, to growing Gooseberries for the above purposes, and to rearing poultry for profit. He asks for information relative to Gooseberry-culture; and as part of his acre is walled, we reprint the following from one of our early volumes, and from one of Mr. Loudon's publications.

For training against the wall, select clean, healthy, and strong plants, with a clear stem a foot in height, and having chosen two shoots of uniform strength, the one diverging to the right and the other to the left, cut away all the remaining shoots; and having planted the requisite number of trees 4 feet from stem to stem, nail them. If the space to be covered is more than 6 feet in height the plants should not be so wide apart; 3 feet for an 8-foot and 2 feet for a 10-foot wall. The following summer all the shoots on the horizontals are to be rubbed off, except one to the right and one to the left of the stem, and 4 inches on either side of it; and as many more as the horizontals will hold should be left at 8 inches apart from these two shoots and the same distance from each other. The horizontal branches are to be pruned to about half their length if weak, one-third if moderately strong, and left their full length if very strong. The shoots from the extremity of the horizontal branches are suffered to grow at their freedom, and, to throw more vigour into them, the perpendicular shoots, if any, are stopped to three leaves; but when the horizontal shoots have grown 1 foot 8 inches on each side of the stem they are brought down to the horizontal line, and all eyes and shoots rubbed off, except, as before stated, those along them at 8 inches apart. At each of these distances a shoot is to be encouraged and trained upright. Sufficient should be left in pruning or disbudding at the places desired, in order to be prepared for emergencies.

At planting the tree will appear thus—  
*fig. 1.* In the autumn following the tree will be pruned and trained so as to appear like *fig. 2*, if the shoots are trained 8 inches apart, or like *fig. 3* if left 6 inches distant.



Fig. 1.

In the second season the shoots are trained upright, and allowed to grow at their free will, only nailing them up so as to prevent their being broken by winds; and if any side shoots appear they are stopped to three eyes in July, but the leaders must not be stopped. They should, however, each be cut in the autumn to a foot in length (*fig. 4*), and so on year after year until the space is covered.

Fig. 2.

All foreright or breast-wood shoots should be removed as fast as they appear in after years, retaining the short spurs only; for if the shoots be allowed to grow they will appropriate

in the formation of useless parts the sap which ought to be expended on the fruit and for the formation of fruit spurs. It is too late to remove shoots in autumn, for they have then done all the harm they can, and they ought not to remain on the trees longer than for two or three leaves to form, when they should be stopped. This encourages the formation of fruit spurs, and admits



Fig. 3.



Fig. 4.

light and air to the fruit and leaves.

When the old branches are worn out a young shoot should be encouraged near the bottom; and when the fruit is gathered the old branch may be cut out, and the fresh one trained in its place. Six shoots 8 inches apart are ample to leave on trees planted 4 feet apart, or at most eight; but when the

shoots are only 6 inches apart the leaves on the spurs shade their neighbours too much, and the fruit is, consequently, indifferent in flavour. Three, or at the most four, shoots from one tree are ample to train up a wall more than 6 feet high, and even then the trees are apt to become deficient of wood at the bottom. Six feet is quite high enough to train Gooseberries; and although they have been grown as standards to from 4 to 6 feet high, they are but bushes, and are not suited for growing as wall trees.

Mr. Mathias Saul, of Lancaster, details the following as the plan of training the Gooseberry trees adopted by those

growers who wish to have large and heavy fruit for the prize-shows. As all the fruit grow from the under side of the branches, the plan adopted for first putting the tree in a training state is to have a few hooked sticks (*fig. 5*) and forked sticks (*fig. 6*), the former to hold down the branches that are inclined to grow upwards, the latter to support those which are inclined to grow downwards. The plant (*fig. 7*) has been trained by such sticks. It consists of three shoots spreading regularly, and nearly horizontally, outwards. Next autumn these three shoots will have produced a number of side shoots, most of which may be shortened to one eye, and the others reduced to one-half of their length. No shoots should be left either at the origin or the extremities of the branches, but only at the sides; the fewer the number of shoots, and the younger the tree, the larger will be the fruit.

Fig. 5.

Fig. 6.

At the next pruning season—viz., November, the tree will consist of the three principal shoots, each bearing two young shoots shortened to about 7 inches of their length; these last, in the succeeding year's pruning, are to be left with two shoots only of new wood; all other shoots are to be closely cut out; and, in leaving the young shoots for bearing, regard must be had to keep the whole in a regular and handsome form.

In all following years the system of pruning and thinning is to keep a moderate and constant supply of strong healthy young shoots, from which alone can be expected large and fine fruit; and, whenever the extremities grow beyond the proper bounds, such branches should be cut back, so as to keep the tree in a compact form, and furnished sufficiently, though rather thinly, with new bearing wood: for large fruit cannot be expected if the tree is too much crowded with old and young wood; because the fruit should have, as much as possible, a full share of the strength of the tree.

And it is not only to the branches and top of the tree that the care of those who wish to excel in the cultivation of the Gooseberry must be directed; they must pay attention to the roots also, as it is necessary they should be pruned every two or three years. When a root, therefore, has extended too far from the stem, let it be uncovered, and all the strongest leaders shortened back nearly one-half their length, and covered-in with fresh marly loam. This will cause new and more active roots to be formed nearer the stem, and give the whole tree new vigour. A Gooseberry garden should be a deep, rich, marly loam, moderately moist, and at the bottom of a sheltering hill.



Fig. 7.

## EAST LONDON AMATEUR FLORICULTURAL SOCIETY.

THIS Society, which has been established some eight years, is composed chiefly of residents in the populous districts of Bromley and Bow, and who are mostly men who are engaged in business pursuits in the immediate neighbourhood. The plants are all grown and flowered amidst the smoke of numerous factories and close to the dust and dirt of crowded thoroughfares, and the way in which these amateur gardeners (who find time after their hard day's toil to attend to the varied wants of their own plants) staged their specimens was worthy of high commendation. They generally hold the spring Exhibition about the third week

of March in the Bow and Bromley Institute. This year, owing to circumstances over which the Committee had no control, it was not held until the 7th of April, and it continued for the following three days.

It would occupy too much space to give a detailed account of the Exhibition, but all honour was due to Mr. Parker for three splendid masses of Solomon's Seal (*Convallaria Polygonatum*) in pots; they were superbly flowered. Twelve pots of Tulips and twelve pots of *Polyanthus Narcissus*, from the same exhibitor, were all that could be desired. Mr. Wordley, jun., was greatest amongst Hyacinths, and though it was so very late for them, his twelve spikes were large and in beautiful condition; but as it is not possible to mention all, it is almost invidious to particularise, as good plants were the rule and bad ones the exception. In miscellaneous collections of plants, Azaleas, Palms, Cinerarias, and *Spiraea japonica* figured. Mr. Hill, a professional grower, exhibited some very good collections; also an excellent new Hyacinth, Victor Emmanuel, with large rose-coloured bells and a good spike. The prize for the best Hyacinth in the room was awarded to King of the Blues.

At such exhibitions much valuable information is elicited as to the best flowers for growing in towns. Fuchsias succeed remarkably well, but Pelargoniums and Verbenas are not satisfactory.

At the dinner which was given to the Judges in the afternoon, some of the exhibitors testified to the good which both themselves and families had derived from their love of flowers; and one gentleman stated that at a critical turn in his business affairs, when day after day he was distracted with care and difficulties, he would spend an hour at night amongst his flowers, and for the time quite forget the cares of the day. Better this than drowning care in the public house, is it not? Such societies as this foster a true love for flowers. But to me there was one source of regret in the fact that the old florists' flowers are not more cultivated by such growers. There must be greater pleasure in tending an Auricula plant, for instance, year after year than there can be in growing a Hyacinth or Tulip when you have to purchase a fresh supply of bulbs each recurring season. May this Society long prosper, and may others similar to it be soon formed in other populous districts of this great city.—J. DOUGLAS.

### GARDENING IN TOWNS.

[From the October of 1848 in which we first ventured to ask for public encouragement until our last published number we have laboured to encourage gardening among all classes and under all difficulties. That we have prevailed in many instances we know. Even in the dome of St. Paul's and on the roof of a barge's cabin on the Thames we have seen potted and boxed flowers cultivated, and in both instances our unknown cultivators replied to our query about their knowledge of culture, "I read THE COTTAGE GARDENER at our club-room." We are well pleased to see that our daily contemporaries are advocating town gardening, and we extract the following from the *Daily News*.]

"That taste for gardening which, according to the author of 'The Parisians,' becomes the refuge and consolation of men of the world in middle life, is, in truth, one of the most spontaneous and instinctive propensities of young and old, of rich and poor. We are not all botanists or horticulturists, but we are all by nature lovers of flowers; and if we cannot all have a bit of ground to grow them in, we can make a garden of a window-sill, and, with a little care and tendance, in the smallest balcony we can follow the round of the seasons, from the Snowdrop and the Violet to the Crocus, the Primrose, and the Hyacinth, and from the Hyacinth to the Rose, from the Rose to the Chrysanthemum, and from the Chrysanthemum to the Snowdrop again, renewing in some sort the freshness of lost illusions, cheating the autumn of our own lives of its sadness, and dissembling under perennial garlands our own 'muddy vesture of decay.' We can plant-ont the cheerless wintry prospect by a little nest of evergreens without envying the possessors of conservatories, which have always something theatrical, something hard and metallic, like the colours of certain fashionable painters, in their brilliance. Our British soil is not so kindly as that of France and Italy for the choicer sorts of flowers; on the other hand, it is one of the kindest in the world for shrubs and trees; and the moisture of our climate is twice blessed to the dutiful cultivator, for whom Nature has the tenderness of a nurse rather than the asperity of a step-mother. The plant Man, said Alfieri, flourishes well in English earth; and so do all robust and hardy, all simple and homely, natural products. We flatter ourselves that no vegetables and no fruits taste better than those which are reared under English skies; and somewhere or other between Penzance and

Aberdeen the daintiest and most delicious are always in season, so that one need not be the proverbial millionaire who began with eighteenthence to indulge the silly vanity of liking only what is out of season. North Britain is not so famous for the geniality and mildness of its temperature as for the picturesqueness of its hills and streams; but North British gardeners, like North British farmers, are renowned throughout the civilised world, and an English garden and shrubbery were long ago the favourite luxury of French *châteaux*, as a relief to the trim formality of the terraces and parterres.

"The author of 'Lothair' did good service to public taste and feeling in these matters when he lamented the disappearance of so many of our old-fashioned English flowers from the gardens of the rich. Perhaps the terrible Latin names invented by the botanists have scared them away. But we hope and believe they are coming back again, if they cannot bring with them the unsophisticated manners of the earlier generations that gave them their names. They have never left the country. Around old manor houses and homesteads, and in villages not a hundred miles out of London, they still sweeten and brighten the daily life and lot of hundreds of honest folk who would be puzzled by the curious patterns of some of the artificial creations of the Horticultural Society—patterns which seem to belong to the milliner's rather than to the gardener's art. Not that we would for a moment appear to slight the admirable skill which the horticultural societies encourage and exhibit, and which has raised the grand old industry of our first parents to the dignity of a science; but that we are more concerned at present to dwell upon the opportunities which even the humblest householder—nay, even the humblest lodger—in a populous and densely crowded city possesses of satisfying, in some appreciable degree, that love of flowers which we believe to be indigenous to the Englishman's heart, and to be part and parcel of his love for his country. If there seems a little affectation in the elaborate floral bowers with which the stucco palaces of Belgravia and Westbourne are disguised by their owners, who desert their country houses from May to August, we recognise an unconsciously pathetic yearning for a purer and wholesomer existence in the little window gardens of St. Giles's and Bethnal Green, in the old English flowers so affectionately cherished, like pining and languishing patients, by the hands of poverty, and touching sordid habitations with some faint far-off imaginings of pleasantness and peace.

"It was a happy perception of these mute relations of men and things that inspired a few of the London clergy with the idea of their window-garden shows and prizes. Few who have not themselves tried the experiment have any idea of the capabilities of even the smallest strip of the most ungrateful soil in the heart of this vast weary wilderness of bricks for the culture of a few of those simple flowers which are a feast to tired eyes, and sometimes, it may be, a balm to bruised and despondent souls. Let it always be remembered that even in the cruel London clay, which is but a burial ground to almost every class of flower, Roses will grow—if at least the smoke will spare them. Every lodger who can call an attic-window his own as long as he pays his rent for it, can make it bloom with colour, and recall perhaps in meditative moments or in sickness the perfume of his native air."

### THE ELECTION OF ROSES.

In Parliament the members sometimes rise to explain—I ask the same privilege. I knew so few of the Roses of the years proposed, and was so ignorant of their dates, that I was obliged to ask Mr. Hinton, to whom thanks for his zeal and ability, to excuse me. I am shy of buying new Roses on weak stocks, and still more shy of recommending any that I have not amply tried and found to be "good growers." My gardens are famous sites for windmills; it is therefore too severe a place for "infants." As regards the Roses named, I knew but few of them. André Dunand I never saw in bloom, but spoke only of its deficient growth. I do not, however, think Mr. Hinton's comment is much in its favour. Two great deficiencies in Roses are insufficiency of centre petals and substance of petals. One of the "miserables" I spoke of was Capt. Lamure. I had it, also H. Pages and Monsieur Cordier, two years on trial, and never had a decent bloom of either, and so I discarded them.

I will now speak of such Roses as were grown here, and then of those I saw in the nursery at Blandford. Those grown here—Baroness Uxkull, planted out under glass, was most beautiful. Baron de Bonstetten did not bloom freely in the same

situation. I have now planted both out of doors, and shall be able to judge them. It is a capital grower, and in the way of M. Bouchonne. If it blooms freely—it is a very full Rose of fine dark larkish red—it will hold the place “D. Deal,” assigned it. It is a colour we want. Louis Van Houtte is beautiful, but wants a little more fulness; I have thirteen beautiful plants of it on the seedling Briar. Edward Morren, seventy-six plants, is a Rose here far better than Jules Margottin its parent. It is a famous grower, and hardy as iron. Mr. Cant calls it a “beautiful Rose,” and so do I, and so do the ladies! Countess of Oxford is a fine Rose, and I hope it is hardy (?) Marquise de Castellane is a noble Rose, but it does not grow strongly enough for my windy situation. Out of twelve plants in two years I have never seen but one noble specimen. Ferdinand de Lesseps is here, and good; it is much like Maurice Bernardin. Secondly, Roses seen—Étienne Levet, seven plants are only just come. I have never yet seen any of its blooms. Madame G. Schwartz I saw at Blandford; it is a nice Rose; I have bought seven plants of it; it is a good grower. Abbé Bramet is a beautiful dark shaded crimson Rose, rather flat, suitable for bedding and ornament. I bought thirteen plants of it, but have not yet flowered it myself; the plants are nice and stiff, just suited for a bedder. Madame Hyppolyte Jamain (grown here) is a nice Tea Rose. François Michelin is a good grower; the wood is slight; it will make a trellis Rose; I have never seen its blooms. Mr. Bennett sent his young man here with a promising seedling for me to see, and he said François Michelin was splendid. I have received this morning three beautiful blooms of one Rose, unexpanded, from Mr. Veitch. No name was sent. It is the best seedling (I suppose) that I have seen for some years. There are two very nice Roses of a light colour here, Thyra Hammerick and Clémence Raoux; the latter is very beautiful. It is the best autumnal substitute for Madeleine. This is all I can say of the election Roses.—W. F. RADCLIFFE.

### HEATING.

ABSENCE from home prevented my seeing Mr. Abbey's communication in the Journal of the 26th March till nearly a fortnight after its appearance. I will now confine myself to answering so much of it as is necessary to prevent error in the application of the formula for calculating the length of pipe required, which I gave at page 167 of the present year.

It will not do to take, as Mr. Abbey has done, only an average external temperature (he puts it so high as  $40^{\circ}$ ), and at the same time assume a minimum length of pipe to be heated to  $200^{\circ}$ . This would obviously allow no margin for extra heat when the temperature outside falls below  $40^{\circ}$ . The proper method to ensure more safety is to take for outside temperature the extreme lowest that can ever occur, which in England must be assumed as zero. In such cases a gardener would, however, probably be content if his stove should not fall below  $50^{\circ}$ —which is  $10^{\circ}$  under what Mr. Abbey supposes—and he would also make every effort to maintain the fires bright and strong throughout the night. Still I imagine he could hardly expect more than that the water in the pipes, taking an average of flow and return, should stand at  $160^{\circ}$  towards morning, which is just the time when the greatest cold occurs. This state of facts would give the value of  $D$  as  $55^{\circ}$ , and of  $d$  as  $105^{\circ}$

in the formula  $p = \frac{11DS}{15d}$ . Applying these values to Mr. Abbey's stove, where  $S$  is 1188, we obtain the length of pipe required as 456 feet. This is 100 feet less than Mr. Abbey possesses, but 100 feet extra above the bare minimum that would suffice is not too much. Let us, however, take not the possible extremes but the ordinary winter temperatures that have to be provided for by ordinary firing. We must expect many nights to fall below  $15^{\circ}$  in the open air, and to keep the internal temperature at  $65^{\circ}$  makes  $D = 50^{\circ}$ . To yield a pleasant genial heat the temperature of the pipes ought never to exceed  $150^{\circ}$ , which will make  $d = 85^{\circ}$ . To meet these requirements in Mr. Abbey's stove the length of pipe would, by the formula, be 513 feet. This is within 40 feet of what Mr. Abbey actually has, and the difference would probably be required if we made a sufficient allowance for the wall surfaces in addition to the glass superficies. Thus a builder employing the formula would introduce as nearly as possible the extent of pipe which practice has shown to be desirable.

Let me add that it would be interesting and instructive if some of your readers would give the result of their experience in regard to the amount of coal required for the boilers under

their charge to maintain a given heat in a glass structure, comparing it with the amount which ought to suffice (as shown at page 166) for the extent of glass heated. But in doing so they must be careful to take the average temperature, external and internal, during the hours when the heat is maintained by the fire alone, for no results could be arrived at when the variable heat of the sun is allowed to have influence on the averages.—J. BOYD KINNEAR, *Guernsey*.

### NOTES AND GLEANINGS.

WE have received a schedule of prizes to be awarded at the forthcoming Show of the BURTON-ON-TRENT FLORAL AND HORTICULTURAL SOCIETY. First in the prize list we observe extra awards of £15, £10, and £5 for stove and greenhouse plants, which there is reason to believe will bring into the rank of competitors exhibitors well known to the principal shows. We commend the Committee for their liberality and enterprising spirit, and hope that their highest anticipations will be realised.

THERE is now in a house in the garden of the Royal Horticultural Society at Chiswick, a collection of 160 varieties of PLUMS, growing in pots, in full bloom. There is every appearance that there will be a good crop of fruit, and for the first time for many years an opportunity will be afforded of making valuable comparative observations on the many varieties of this valuable fruit.

SOME members of the swallow family—the house martin (*Hirundo urbica*)—were seen at Crewkerne on the 5th, and it is said that they have been in the neighbourhood for more than a week. The swallow proper (*Hirundo rustica*) is “due” about three days later than the martin, while the swift, another of the same tribe, is the last to arrive, being generally seen about the same time as the welcome notes of the cuckoo are heard in Wilts—the 14th or 15th of April. However adverse the weather, these birds come and go with the seasons, and perform the task given them to do with the same regularity as the moon performs her revolution round the earth.

THE decrease in the IMPORTATION OF POTATOES has been remarkable. In the last three months the declared value was £342,827, and in the same period of the preceding year, £1,036,384. This arises chiefly from the Potatoes having vegetated so as to be unfit for table-use.

### PLANTING A CEMETERY.

THE formation of cemeteries near towns is one of the most remarkable signs of the social progress of the day. The graphic pen of Dickens long ago powerfully depicted the appearance of those horrid enclosures, the graveyards of our towns, the bare, dismal, forlorn aspect of which is more in keeping with that of the sepulchre of an Australian savage than of one belonging to a Christian community. We inscribe “Resurgam” upon our tombs, and profess the strongest faith in a glorious and blissful life beyond the grave, and yet every feature as well as association of those graves was, and is now in many instances, symbolical of solitude, desolation, and death, rather than the brightness and fulness of the Christian's hope. Nor was this confined solely to the places of burial in towns. It is true that the play of sunshine and pure air over the village churchyard will impart a certain brightness and freshness that is inseparable from all rural scenery; but even now it is rare indeed to see a churchyard that at all approaches one's conception of what “God's acre” should be. Gray's lines—

“Beneath that Yew tree's shade,  
Where heaves the turf in many a mouldering heap,  
Each in his narrow cell for ever laid,  
The rude forefathers of the hamlet sleep,”

though not altogether truthful, serve to convey a tolerably clear idea of the scene, which is rendered complete by the addition of a few quaint old tombstones, moss-grown and grey, leaning in picturesque contrast to the bold white slabs of a later date. Thus, then, a solitary Yew tree or two, sombre and mournful-looking, were usually the highest effort of our forefathers in churchyard decorative art; and perhaps it is as well that it was so restricted, for the work affords the fullest scope for the exercise of a more refined and cultivated taste.

Neatness is the first, because it is the most desirable principle that I would wish to see more generally enforced in church-

yards. No ragged Nettles should fill its corners, nor should the herbage be cropped by sheep, as is so often done, but the whole of the surface of this small portion of mother earth containing the remains of our kindred should be clothed with a carpet of fine turf intersected by convenient gravel-walks all kept trim. Upon the walls of the church that are sheltered and sunny there might be such Roses as *Solfaterre*, *Gloire de Dijon*, and *Souvenir d'un Ami*, mingled with *Clematis*, *Jasmine*, *Escallonia*, and *Ceanothus*; and for walls of colder aspects *Lonicera flexuosa*, *Crataegus Pyracantha*, and *Ivy*. Although large trees are out of place in so confined a space, a few Conifers might frequently be introduced with advantage. Of such I would select *Abies canadensis* and *A. Albertiana*, *Cupressus macrocarpa*, *Juniperus chinensis*, *Thuja aurea*, *Retinospora pisifera*, and *Retinospora ericoides*. Nor would I

confine the list solely to evergreen forms, but let the falling leaves, swelling buds, and opening flowers of deciduous shrubs each in their season impart a meaning and significance to the planting, causing it to convey many a lesson of comfort and hope to those who there drink deeply of sorrow's bitter cup.

We have a perfect host of familiar forms to select from, all very suitable for the purpose, such as *Lilacs*, *Thorns*, *Pyrus*, *Berberis*, *Broom*, *Gneldres Rose*, *Furze*, *Deutzia*, *Cotoneaster*, *Roses*, *Spiraea*, and *Weigela* in all their numerous varieties. Then, too, the graves themselves should be made bright with flowers. The *Snowdrop*, *Crocus*, *Iris*, *Scilla*, *Colchicum*, *Narcissus*, and *Anemone* among the bulbs, &c., with *Lily of the Valley* and other hardy flowers both perennial and annual, would regularly impart a cheerful air of brightness; and so by the exercise of a little energy and taste the village cemetery



WEST LAUREL HILL CEMETERY.

might be converted into a scene of quiet beauty, that would not only tend to "comfort those who mourn," but would, I think, be found to exercise a healthy influence not only upon the minds but the lives of the entire community. The abler pens of your clerical correspondents will, however, more fitly dilate upon its moral influences.

I will turn now to the larger cemeteries of towns. Most of them are of considerable extent, hence a bolder and more varied style of planting is desirable. The "black funeral Yew," the Cypress, and Weeping Willow may find a place there, but trees of this type should by no means predominate. Infinite Wisdom has spread broadcast over the earth an immense variety of vegetable forms, stately trees, bright flowers, yielding an endless profusion of gay colours and rich perfumes, and we shall surely do well to plant the choicest of these "bright gems of earth" within the precincts of our cemeteries. Not that I would wish to convert the scene into one huge flower garden, for there should be repose even to excess by means of the turf and carefully disposed groups of trees; and for a very large cemetery I would introduce a grove, or, if the inequalities of the ground admitted of it, a secluded dell shut-in by trees, with winding walks and seats for quiet thought and meditation. Soft Fern-clad banks, gently rippling streams, and other similar features might there be brought into play wherever they are available, the soothing nature of such things being keenly appreciated by minds opened by grief to their influences. If a grove were planted it might be arranged so as to form a pleasing background to the chapels.

The main road usually begins near the superintendent's house, sweeping onwards till it branches to the chapels, and from these drives spring the entire series of walks. An avenue of *Picea Nordmanniana* or *Abies Douglasii* from the entrance to the chapels, with the trees kept well back from the sides of the road, and far enough apart for an open expanse of turf always to surround each tree, would impart an air of dignified repose to what may justly be regarded as the most important part of the cemetery; and this effect would constantly increase as the trees became larger, for the calm majesty of their presence, with the blue sky or fleecy clouds high overhead, would, I think, be most impressive, and the dead would be borne to their rest along a nobler colonnade than is to be found among the lofty pillars of any cathedral.

Clumps of flowering shrubs, single specimens of trees that are remarkable for symmetry or size, might be grouped near the margin of the walks, and be interspersed among the graves, so as to afford an agreeable relief to the monotony of the flat or widespread surface. Flowers should crown the graves, and climbing plants soften the harsh exclusiveness of enclosures. Plants of this class, too, if rightly used are most striking upon the tombs themselves. The effect of a white stone with its top and sides partly concealed by wreaths of the deep purple *Clematis Jackmanni* would be every chaste; so, too, would the white star-like blossoms of *Clematis montana*, clustering in masses upon a stone of "granite grey." Generally speaking, however, a few simple flowers grouped around the grave are preferable to all straining for artistic effect; and whatever is

done in this way by loving hands, evidence of the cherished memory of departed friends, must always possess a beauty and intrinsic worth that will place it above criticism.—EDWARD LUCKHURST.

[Our brethren in America fully coincide with us in our modern arrangement of the dead's resting-place, and that which they have constructed at Philadelphia is so celebrated that we have copied from the American *Horticulturist* a view of it, named "West Laurel Hill Cemetery," and this accompanying note:—"It shares a national reputation for its beauty of adornment, its size and location. It is situated on a sloping hillside, fronting the Schuylkill river, a little northward of the city. The ground was originally divided into three sections—north, south, and centre Laurel Hill; but demand for space has overflowed all accommodation, until a new tract has been added—West Laurel Hill Cemetery, which alone contains 110 acres.

"In the immediate neighborhood are other smaller cemeteries, with cultivated rural aspect: Monument Cemetery, which is somewhat notable from the fact that it contains a fine granite monument to the memories of Washington and Lafayette; also, Mount Peace, Mount Vernon, Glenwood, Mount Moriah, and Woodland, are each of great beauty and located in the suburbs of the city. The Laurel Hill cemeteries are located so as to be for ever free from the disturbance of ever-increasing city buildings and city streets. They are beautifully planned, laid out, decorated, and ornamented with trees and shrubs, which, interspersed among the monuments or statuary, afford a feast to the eyes of any lover of rural taste."—EDS.]

### THE COLORADO POTATO BEETLE.

A LETTER was recently addressed to Mr. Gladstone by the Secretary of the Central Chamber of Agriculture, "calling his attention to the imminent risk to which the United Kingdom is exposed, and suggesting that the importation of Potatoes from America be at once prohibited lest that "frightful enemy the Colorado beetle" be introduced into the Potato fields of Europe. The Privy Council for Trade declined to adopt such heroic measures, on the ground that "it does not appear that the eggs or larvae of the Colorado beetle have been or are deposited or conveyed in the tuber of the Potato." We present herewith a timely and authoritative statement bearing upon this interesting question. Professor Riley, our accomplished entomologist, clearly shows that if the *Doryphora* goes abroad it will be as a full-grown and healthy specimen, taking a first-class passage. We trust, however, that our foreign friends will not have this scourge added to that which already devastates their Potato fields to such an uncomfortable extent. Professor Riley, State Entomologist of Missouri, remarks:—

In December, 1872, Col. Fred. Hecker, of Summerfield, Ill., the well-known and enthusiastic political agitator and tribune, sent to the *Gartenlaube* (Heft 3, 1873), an article on this insect. The article was a condensation, and in some parts a literal translation, from the Missouri Entomological Reports, my figures being copied to illustrate it. It has since been retranslated and the illustrations recopied (and accuracy is not apt to increase with these processes, and certainly has not in these instances), by several English journals, over the signature "Fr. H., *State of Illinois*;" and since the original translator did not think it worth while to indicate the source from which he drew either his information or illustration, it is not surprising that the *Gartenlaube* is left without credit in the retranslations. It is surprising, however, that solid journals like *Hardwicke's Science Gossip* and the *London Gardeners' Chronicle*, should have been so easily led into the consideration of such myths as "*Cantharis viniaria*," "*Doryphora decempunctata*," &c. Some of the articles in the English periodicals on this "new enemy of the Potato" close with the advice that "in the importation of seed of American Potatoes, which is now carried on to a very large extent, the utmost caution should be exercised to prevent the introduction of the beetle to this country."

That there will be danger of the insect finding its way to Europe when once it reaches the Atlantic seaboard, no one can doubt; for the impregnated females will live for weeks and even months without food, especially in the spring and autumn, when they also take most readily to wing. Such females, alighting on outward-bound vessels, may easily be given free passage to European ports, and as they will be apt to land without passports, it would be well for the authorities

to look out for and prevent such unwelcome incursions. I do not think that there is danger of the insect being carried across the ocean in any other way, for Potato plants on which the eggs or larvae might be carried are not articles of commercial exchange, and seed Potatoes do not, as a rule, harbour the beetles. Let our European friends profit by our sad experience with this insect, and, taking time by the forelock, endeavour to prevent its introduction into their Potato fields. This end will best be accomplished through the agricultural and horticultural societies, which should make provision for the dissemination of correct information concerning the pest. A small card, giving a coloured figure of the beetle, or of all stages of the insect, setting forth the disasters which would follow its introduction, and appealing to the reader to assist in preventing such a calamity, would do good service if posted in the cabins of vessels plying between the two countries, in the warehouses and seed-stores of seaport towns, and in the meeting rooms of agricultural societies. Some such simple means of familiarising the public with a possible enemy should be adopted in a country like Ireland, which will perhaps be the first to receive the pest and would suffer most from it.

In Prussia the Government has adopted a system of agricultural teaching which other countries might well pattern by. Travelling teachers (*Wanderlehrer*) are appointed, one to each district (*Kreis*), of twenty or thirty square miles, whose duty it is to call the farmers together in their meeting-houses, lay before them recent important facts in agronomy, institute experiments and implement trials, &c. With such a system the agricultural community can easily be made aware of possible danger, and a large bottleful of our ten-striped Potato beetles, which a St. Louis friend of mine took over there a year ago, did good service, in that the beetles were distributed, as exhibition specimens, to some of these travelling teachers.

[The Editor of the *New York Tribune* has obliged us by sending the above.—EDS.]

### FRUIT PROSPECTS AND CULTURE IN LINCOLNSHIRE.

THE notes on the severe weather in March, and its effect on the fruit blossom in different parts of the country, which have appeared in the Journal could not fail to prove interesting. In success or failure, and especially the latter, each likes to know how his brethren fare. It is well that this intercommunication should pervade the great body of gardeners and garden lovers, and well that it should be fostered by such a genial medium as the readers of these columns acknowledge and rejoice in. It is akin to bearing each other's burdens. One's joy is robbed of half its pleasure if shut up in mere individuality—if it cannot expand and lighten another's heart; and one's obstacles fall with crushing force if borne alone, with no spark of fraternal sympathy.

I have lately been unwell and unable to write, but have read with interest and a large measure of satisfaction that my friends of the garden have escaped so generally well the wintry ordeal when the second week in March jeopardised the objects of their care. With a sudden visitation of 15° to 20° of frost just at the time the fruit blossoms had cast their winter covering, it was, I was going to say, a "dark look-out." This, however, would be a misnomer, for never did the face of nature look more pure, and chaste, and silvery, when every twig, and spray, and bud was draped and bent down with such a robe of ice as the eastern counties presented at that time. It looked as if the fruit crop was shrouded in its winding-sheet even in its very infancy—as it were in embryo. Yet what looked like death a month ago now betokens life, health, and prosperity, and the fruit prospects at the present moment are hopeful and bright. Should no more severe frosts overtake us, the fruit crop may be expected to rank amongst the best of past years. Old trees and young are alike promising, and why? The old were granted a new lease of life by the searching root-refreshing wet of the summer of 1872, and the young were made fruitful by the extraordinarily dry autumn and winter of 1873-4. Previous to the wet summer named many an old scraggy tree looked like a mere cumberer of the ground, but the deluge of water reached the roots deep down in the dry subsoil, and gave renewed life and health. Seldom have forest trees been robed in a richer hue of health than during the past summer, fed as they were by the replenished larders and cellars

of the preceding year. Old fruit trees alike rejoiced in the generous fare and put forth fresh growth, which the subsequent dry autumn matured into blossom, which will immediately lighten up the earth with floral beauty.

The frost, which at one time threatened destruction, has not, after all, done material or substantial injury. Apples were backward—hence safe; of them there was no fear. Small fruits, by the same cause, gave no concern. Pears being more forward were a cause of extreme anxiety, but not one spur of bloom in twenty is killed. Plums, Cherries, and Peaches were not sufficiently advanced to endanger the crop, which promises to be good. The one crop which bore the brunt of the frost was the precocious Apricots. These were regarded as “done for,” yet in most cases there is a sufficient residue to form a fair crop. It is a question if in many places the frost has not done more good than harm to the Apricot trees—that is, so far as the current crop of fruit is concerned. Most trees were packed with blossom to a degree that it was not possible for it to expand, and under these circumstances a good “set” can never be relied on. The frost thinned the blossom, and almost every bloom thus left is leaving a fruit behind it. Fruit blossom, and especially Apricot blossom, when preternaturally dense is apt to fall in a shoal after three consecutive bright days; whereas if a tithe had been removed, by its tenfold vigour it would have withstood the exhaustive strain which it would otherwise have had to bear. And even when set, or in the last stage of setting, the young fruit will frequently shrivel from a hot sun and the dry atmosphere of a southern brick wall extracting the juices of the tree faster than the roots—at that juncture comparatively inactive—can supply the loss. A gentle syringing of the trees under these circumstances often will and has made all the difference between a full crop of fruit and a scanty one.

Strawberries can hardly be spoken of with anything much beyond a guess. They are late. I shall not be surprised if the trusses show weakly; they often do under a dry air and a long term of sunny days. As soon as the blooms show, a good soaking of liquid manure would be of great benefit, especially to old plants, and if it could be made 5° or 10° warmer than the soil this would increase its usefulness and pay good interest for any little extra trouble on that point. This should be given before the blooms expand, and as soon as ever the trusses can be clearly seen pushing out of the crowns. From the best judgment I can form I am almost certain I shall see a weakly blossoming, and rain or no rain I shall treat those under my care with a dose of liquid in full confidence of seeing after-benefit. Much injury is frequently done to many things by using stinging cold water from a well or spring just at the time when the chief requisite is an increased root-temperature.

The promise of 1874 is attributable to the wet year of 1872 pushing old trees into a better growth than usual, giving them more power to form fruit buds, and the dry autumn and winter of 1873-4 maturing the wood and keeping the buds in a resting state until a comparatively late period in the spring. This latter condition has been very noticeable and a matter of surprise to many. When we saw Roses, Daisies, and other things forgetting their season and blooming at Christmas, it made one tremble lest the fruit blossom should awaken into life a month before its time and be destroyed by the frosts of spring. But while the winter has been one of the mildest on record—the general mean temperature for the five months, November to March, being 40°, the mean night minimum during the whole of this period exceeding 34°—the fruit buds kindly continued their slumbers for a longer time than usual. This sap rest, in spite of an abnormally high winter temperature, is due to an absence of wet. That deciduous trees and shrubs will rest under a high temperature, providing it is dry, most gardeners will have noticed in the matter of Vines, Roses, &c.; but introduce a moist atmosphere, and imitate rain with the syringe, and the sap is at once excited into action. We have had scarcely any rain this winter, and the sap was still, in consequence, to a later period in spring than is ordinarily the case under a lower temperature. Referring to the rain register I find that the five months named have this winter not averaged quite an inch per month, the gross amount being only 4.94 inches. In the same period last winter 11.72 inches were registered on the same spot—a monthly average of 2.34 inches. With the exception of an apology for a shower we have had no rain for twenty days, and only 0.86 inch for forty days. Many a “king’s ransom”—if a peck of dust in March is worth one—has been distributed over hedge and field, and a finer spring seed-time

has never been known. To-day (April 8th) a nice shower has fallen and more is coming. It is especially welcome to the farmer and gardener alike.—J. WRIGHT.

### THE HISTORY OF THE ROSE.—No. 3.

ACCORDING to Nicander, in his “Georgics,” beautiful Roses grew at a place called Themis, or Thetis; and at Olenum, a city of Achaia, not far from Patræ, now called Patras. Next to these places, Megara, Nisæa, Phaselis, and Tenedos were celebrated for their Roses; but the finest grew at Magnesia ad Mæandrum, a city of Lydia, now called by the Turks Gysel Hisar, or the Beautiful Castle. One of the speakers in “Athenæus” is made to say that what is related by Æthlius Samius in his work upon the singular occurrences which take place at Samoa—namely, that in that island Figs, Grapes, Apples, and Roses are produced twice a-year, appears neither improbable nor untrue. Cyrene, also, according to Pliny, was celebrated for its Roses; and, according to Herodotus and Martial, Egypt was also renowned for these flowers. Herodotus says that in the gardens of Midas Roses grew spontaneously, and that some had sixty flower-leaves, and were more fragrant than the rest.

According to the Calendar of Natural Occurrences in Greece, the Rose blossomed in March; the *Rosa græca*, or *Lychnis coronaria*, in May. In the Roman Calendar we find early Roses were in blossom in April, and that in May they were generally in flower. In Egypt, according to Theophrastus, the Rose blossomed two months before it appeared in Italy, and continued in flower for almost as long a time in the former country after it had ceased blowing in Italy. In the latter country it succeeded the blossoming of the Violet and the Lily.

Among the ancients the Rose was employed as a medicinal remedy; at their festivals and sacred ceremonies; and as an article of luxury at their banquets. Of the medicinal uses of the Rose frequent mention is made by Oribasius, Actuarius, Marcellus, Myricus, Celsus, &c., together with many ancient writers on pharmacy. The accounts afforded by these writers are not sufficiently interesting to claim particular notice.

In alluding to the more general uses of the Rose among the Greeks and Romans, the employment of flowers generally must in some degree be referred to; but the Rose was unquestionably the most esteemed of all flowers.

By the Greeks and Romans flowers were frequently employed. It was usual for them to adorn the temples, altars, and statues of their gods with them. (See Euripides: *Hippolytus*, *Troades*, *Helena*, &c.) Wreaths of flowers were also worn by those who were present at, or assisted in, the celebration of sacred rites (Eurip. *Iphigenia in Aulide*). They were also offered to those divinities to whom they were considered most grateful. It was a Grecian custom, according to Athenæus, to decorate the doorposts of houses where a maiden about to become a bride resided. The dead were crowned with flowers. It is still a custom in the Levant to strew flowers on the bodies of the dead, and in the hands of young persons to place a nosegay. Sophocles has represented Electra and Orestes as repairing to their father’s tomb to deck it with garlands and honour it with libations. The relatives of the deceased wore garlands of Roses during the days of mourning, as emblematical of the shortness of life, which passes as quickly away as the beauty of those Roses would which formed the mourner’s crown. The tombs of the dead were decorated with Roses, under the idea that they possessed the power of protecting the remains of the deceased, and were peculiarly acceptable as an offering to their manes. Other flowers besides the Rose were selected as having a special fitness for these purposes. The Greeks also used the *Amaranthus*, which is commonly regarded as the flower now known by the name of “Everlasting.” Parsley and Myrtle were also funeral plants. But the Rose has been for ages the favourite flower for funeral and all other purposes.

Among the Romans all flowers of a purple or white colour were regarded as grateful to the dead. They were so fond of the Rose, that we find inscriptions which refer to legacies left in their wills for the express purpose of providing Roses, with which their tombs were annually to be decorated.

... Donavit sub hac conditione,  
Ut quotannis Rosas ad monumentum ejus deferant.

(He bequeathed it on this condition, that annually Roses should be brought to his tomb.)

(See *Le Antichità d’Aquila*, Giandomenico Bertoli: Venezia, 1739: p. xix. cccxxvii., &c.)

Roses were also strewed on the tables at their convivial entertainments, and on the floors of the rooms in which they feasted. Pacatius says:—"Delicati illi et fluentes parum se lautos putabant, nisi luxuria vertisset annum, nisi hyberna poculis Rosæ innatassent." ("The soft and luxurious thought themselves not sufficiently refined unless their extravagance changed the course of the seasons, unless winter Roses floated in their cups.") Suetonius relates of Nero, that he spent upwards of £30,000 at one supper in the purchase of Roses. This custom is supposed to have been introduced during the time of Horace; an opinion which has been formed from one of his odes (lib. i. od. xxxviii.), thus translated by Francis:—

"I tell thee, boy, that I detest  
The grandeur of a Persian feast;  
Nor for me the Linden's rind  
Shall the flowery chaplet bind:  
Then search not where the curious Rose  
Beyond his season loitering grows."

Cleopatra is said to have expended a talent in the purchase of Roses for one banquet, on which occasion the floor of the apartment was covered with Roses to the depth of a cubit, or 1½ foot.—(*Athenæus, Deipnosoph. lib. iv., cap. ii.*)

The chief use of the Rose at feasts was to form crowns and garlands, which were placed upon the heads and round the necks of the guests. The garlands were generally provided by the master of the house. Those who attended on the guests were also crowned, and even the drinking-bowls were wreathed with flowers. Owing to this use of the Rose, we learn from Anacreon that a crown composed of them was regarded as an invitation to festivity; they were also considered as preventives of drunkenness; though certainly, in some instances, the flowery wreath seems to have been a well-understood mark of inebriation.

"Capiam mihi coronam in caput, assimilebo me esse ebrum."

PLAUTUS, *Amphitryon*, act. iii., sc. 4.

"I will place a chaplet on my head, and pretend to be drunk."

Rich unguents and oils were also prepared from the Rose (see *Homæ, Il. xxiii.*, 186), which were used on the same occasions as the Rose flower itself.

Many are the customs and superstitions connected with the Rose in our rural districts. On midsummer eve many a maiden gathers a Moss Rose.

"She bids it for her lover's sake  
Await the new-year's frolic wake—  
When faded, in its alter'd hue  
She reads—'Then Robin is untrue.'  
But if it keeps its crimson paint  
Her sick'ning hopes no longer faint."

Newton, in his "Herball to the Bible," 1587, pp. 223-4, says:—"I will here adde a common country custome that is used to be done with the Rose. When pleasant and merry companions doe friendly meete together to make good cheere, as soone as their feast or banquet is ended, they give faithfull promise mutually one to another, that whatsoever hath been merrily spoken by any in that assembly should be wrapped up in silence, and not to be carried out of the doores. For the assurance and performance whereof, the tearme which they use is, that all things there saide must be taken as spoken under the Rose. Whereupon they use in their parlours and dining roomes to hang Roses over their tables, to put the companie in memorie of secrecie, and not rashly or indiscreetly to clatter and blab out what they heare. Likewise, if they chauce to shew any tricks of wanton, unshamefast, immodest, or irreverent behaviour either by word or deed, they protesting that all was spoken under the Rose, do give a strait charge and pass a covenant of silence and secrecy with the hearers, that the same shall not be blowne abroad, nor tattled in the streetes among any others."

There are many other less remarkable uses of the Rose, which it would be necessary to mention in order to render the above by any means a complete account of this flower; their importance, however, does not warrant their insertion here. To the philosophic botanist the above account of the Rose will not, it is believed, be attractive; to the horticulturist it may present many pleasing features; to the classic reader it will recall customs most intimately blended with the beauties of Grecian and Roman poetry. The feeling, too, which dictated some of the most striking and touching uses of the Rose especially, and of flowers in general, is universal and natural to nearly all nations. The decoration of the tombs of the dead with flowers was an inexpressibly beautiful custom; and, though strenuously denounced by the early Christians as savouring of idolatry, the hearts of men soon wandered back to

so simple, so elegant, so natural a mode of testifying affection. This is a custom which has been well said to be "of the heart, and to speak to it, and has therefore maintained its ground in every age and region, unaffected by the constant changes in customs merely arbitrary and conventional."

## NOTES ON VILLA AND SUBURBAN GARDENING.

Nothing can be more brilliant than a large bed of *Gladiolus psittacinus*; in fact *Gladiolus floribundus*, *blandus*, *cardinalis*, *Victoria*, and the whole of the genus are beautiful. No time should be lost in procuring and sowing the seed, which would have been best sown last month. A few more plants requiring similar treatment are *Tigridia pavonia* and *conchiflora*, and *Anomatheca cruenta*. The former two make showy groups throughout the season; and the *Anomatheca*, if four or five bulbs are planted in a pot, and plunged in a bed when in bloom, is a gem for the flower garden in May. The *Tigridias* may be treated like *Gladioli*, but the *Anomatheca* will be pricked out 2 inches apart in seed pans in light rich soil, and sheltered in a frame until well established.

*Treatment of Plants Intended for Bedding-out.*—At this season of the year there is a danger which the amateur should guard against, because it is one which gardeners themselves are apt to make, and if fallen into will be productive of much loss and disappointment; I mean the premature committing to the flower beds the more tender plants which have been carefully preserved during the winter, and on which the beauty of the summer season is so dependant. During the months of April and May the skies are often so propitious that we cannot but believe the winter is quite departed. With warm nights and bright days we banish every thought of frosts and bleak winds. All hands are set to work to turn out our *Pelargoniums et hoc genus omne*, and we flatter ourselves that we shall have a long and prosperous summer. But we soon find that we have committed a mistake; north and east winds return, and night frosts reassert their iron rule, and a few hours blast the labours of a whole winter. But the important question arises, What is to be done with those plants in pots which are intended for ornamenting the beds in summer, but grow too rapidly for their present confined quarters? This matter must now receive the immediate and careful attention of the amateur, since many productions may become permanently stunted by being left too long in small pots. Now, it should be remembered that vegetable growth may be retarded without inflicting any injury on plants subjected to the treatment. The pots should be removed from a sunny spot to the shade of a north wall, where growth will continue stationary for many weeks. They should be defended from much rain, and receive protection enough to avert frost, and no more. By these means the growth of roots will be checked, and there will be a marked difference between plants so treated and those subjected to warmth in a glazed frame. This retardation of growth will be of service many ways, and will result in the production of fine plants at a future period, but I mention it now only as a means of preventing those plants being pot-bound and injured on which so much of the beauty of the season is to depend.

If your stock of plants is small, and you have plenty of frame room, you may report as it becomes necessary, and thus turn out the whole in a highly-developed state in the middle of May. Many things will do well in this way, but generally greenhouse treatment is not favourable to plants which are afterwards to be turned into beds or borders. The tenderness they acquire by being kept under glass, or even being covered-up at night, exposes them to checks when planted in the open air. This would not be the case if they were not turned out till the summer had become established, but too much time would thus be consumed in preparatory management. Another good plan is to cover over at night with a flower pot any plants which you are disposed or compelled to commit to their destined place. In all these questions an enlightened judgment must guide you, the object being to have your *parterre* gay with flowers for as long a time as possible.

The proper time for striking the cuttings of *Chrysanthemums* depends upon the object which the propagator has in view. Nurserymen who want a good stock of a particular kind may propagate almost at any season, and generally begin very early in spring; but for ordinary purposes from the middle of March to the middle of April is quite soon enough, and the amateur can now do so without any artificial heat, which is of great consequence to those who have very limited gardens. It matters very little whether the cuttings are taken off with roots or without them, as in the latter case they will form them in a few days and soon begin to grow rapidly. The frame should be kept very close, moist, and shaded until the cuttings have formed roots for their support. When this takes place a little air may be admitted, gradually, as the plants will bear it, but afterwards the plants may be fully exposed.

The shifting of the plants in the earlier part of the summer should be particularly attended to; if this is neglected no good after-management will save them from losing their leaves and

looking badly in autumn and winter. As soon as they are fairly started into growth the top of each should be nipped out with the finger and thumb, which will cause several young shoots to spring from the under part of the plant, and thus form it into a compact bush. This may be repeated two or three times with advantage in the earlier part of the season, and after the plant is fairly formed should be discontinued.

The soil for their growth can scarcely be too rich; about equal parts of loam, dung, leaf mould, and sand make an excellent compost. Manure water is also an excellent material, with which they can be watered twice or thrice a-week during the growing season.

There is one error in the cultivation of *Chrysanthemums* into which the inexperienced amateur is apt to be led, and that is neglecting or paying but little attention to his plants after the flowering season is over. They are either allowed to remain in a warm greenhouse and forced into growth, or they are thrust aside and neglected till late in the summer, when he recollects that they are wanted for winter flowering.

Take care of your *Hyacinths*, *Tulips*, *Ranunculuses*, and *Anemones* now, for they will be hastening into bloom.

Keep the walks rolled, and the grass walks and lawn nicely mowed, and the borders free from weeds and rubbish.

Those who have no opportunity of procuring plants had better sow in a warm situation a few seeds of *Cauliflowers*, *Broccolis*, *Brussels Sprouts*, *Large Green Savoy*, and *Vanack Cabbage*. A sowing of *Turnips* had better be got in on the first favourable opportunity. After a shower draw the earth to the stems of *Cabbage* plants which were planted either in autumn or spring. This will guard the stems from the sun and wind, which will dry and harden them. Be careful to destroy slugs and snails, which at this season are invited abroad by gentle showers.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT AND KITCHEN GARDEN.

The present is a very anxious time for growers of hardy fruits; one night of frost may blast our hopes for a whole season. In gardens where the trees are small something may be done in the shape of protecting the blossoms from frost by covering with canvas. A framework made of some light material must be constructed in order to keep the canvas from rubbing against the blossoms, otherwise the material would do more harm than good. Large trees, in the majority of cases, must take their chances, but very large trees ought not to find a place in the kitchen garden. Bush and pyramid-trained trees, kept within bounds by summer pruning, will be the most fruitful as well as most profitable sort to cultivate. There are some gardens where the large standard fruit trees entirely preclude the possibility of good vegetables being grown underneath them, whereas the more dwarf-trained trees, if judiciously planted, shelter the crops but do not overshadow them. Wall trees must be attended to on frosty nights. The protecting material should be let down whenever there are signs of frost, and rolled up at 6 A.M. if there was no frost on the previous night; if there has been a frost, between nine and ten o'clock will be quite early enough. The Plums on our wall seem to have set well. Pears and Cherries are in full blossom.

Hoeing, earthing-up, and placing sticks to Peas; digging lightly over any ground that was dug or trenched during the winter; hoeing borders with the Dutch hoe, and also quarters of *Cauliflower* plants. Walks are also being regravelled. The surface is first broken-up, and where it has become dirty it is removed. The clean gravel is then laid on the surface, trodden-in, and a heavy roller passed over it two or three times. Thinned the crops of *Early Horn Carrot* and *Lettuces* under ground-vinery lights. *French Breakfast Radish*, sown between the rows, has been pulled out for use.

### FRUIT AND FORCING HOUSES.

*Vineries*.—The Grapes are now colouring in the early houses, which necessitates a drier atmosphere and a chink of air to be left on at night; and whatever precautions may have been taken to prevent it, our dreaded enemy red spider invariably puts in an appearance. Painting the hot-water pipes with sulphur is the only means that will destroy it, and the fumes must be moderately strong to take effect. There is also some danger from overdoing it, though not so much when the Grapes are near the colouring period as when they are in an early stage of their growth. The borders inside and outside, when the latter are covered with shutters, receive a good soaking of water at this time, and they seldom require any more until the Grapes are thoroughly ripened. Many growers also abstain from syringing or watering the paths and borders during the colouring; our borders and paths are sprinkled twice daily in fine weather, and once in dull cloudy weather.

The late houses now claim a considerable share of attention in tying and stopping the lateral growths. To the inexperienced cultivator a few words of caution may be useful. In the early stages of their growth the shoots on healthy Vines make rapid progress, and are therefore extremely brittle, so that in bending

them down suddenly towards the wires many of them snap off, either at the connection with the old wood or about the middle of the growth. It will be seen from this that extreme caution is necessary. The shoots must be brought down gradually, and stopped two eyes beyond the bunch. Where houses are so far advanced that the Vines are in flower, maintain a temperature of 70°, and in the case of shy-setting sorts, such as *Royal Vineyard* and *Gros Guillaume* (although we have never had any trouble with the latter), shake the bunches gently at 10 A.M. and 2 P.M. while they are in flower. A Vine trained on a rafter 18 or 20 feet long will require attention for eight or ten days. In the case of *Royal Vineyard* a globule of moisture may be observed on the stigma; it is best to draw the hand over the bunch to disperse the moisture, or use a soft brush. The above will be an answer to "H. S. J.," who finds a difficulty in setting *Barbarossa*. This and *Mrs. Pines's Muscat* set at Loxford as freely as *Black Hamburg*, and the means used are as detailed above.

*Peach House*.—The instructions given two weeks ago still apply to this structure. No red spider will show itself on the leaves if the house is thoroughly syringed twice a-day. The aphid that infests the Peach is not so easily dislodged, but clings firmly to the points of the growing shoots and stops their growth; the leaves also curl-up and further shelter them. Fumigating the house with tobacco smoke is by far the best method of destroying this pest. Brown scale never ought to be allowed to increase; hand-washing is the best way to get rid of this. Remove the scale with a small label, and wash the place with strong soft-soap water.

### PLANT STOVE.

*Stephanotis floribunda* and *Hoya carnosa* are studded with clusters of half-opened flowers; and though the greatest care had been taken to destroy bug by hand-washing during the winter, this troublesome parasite had established itself amongst the flowers, and to remove them from their retreat is a work of extreme difficulty. Indeed, where the trusses are much infested the best way is to cut them bodily off, and convey them at once to the stovehole fire.

*Hoya bella* and *H. Paxtoni* are also very desirable stove plants to cultivate. *Hoya bella* is the best of the species, and has been long an esteemed plant in our stoves. It will, if well cared for, continue in flower for two months, and form a very pretty decorative plant. The flowers are also, notwithstanding their slightly glutinous character, very useful for working into bouquets, for filling small vases, wreaths, and other purposes to which the finer exotic flowers are applied. This species, as indeed are all the *Hoys*, is readily propagated from cuttings, and is amongst the easiest cultivated of stove plants. Light turfy loam, with a little sand and a few lumps of charcoal added to it, is a good potting material. This plant does not make a very large proportion of roots, and should not receive large shifts; indeed, it is better to propagate a few plants annually or biennially, limit the size of the pots in which they are grown to 6 or 8 inches in diameter, and throw the old plants away when they become leggy.

Potted *Catadiums*. The markings on the foliage of some of the newer varieties of these are very beautiful, and are generally admired; but to have them at their best they require liberal treatment, to be placed near the glass, shaded from bright sun, and after the foliage is pretty well developed, to have rather more air than would be suitable for many other stove plants. About one-fifth part of rotted manure should be added to the turfy loam used in potting. Some of the best varieties are *Chantinii*, *Chelsonii*, E. G. Henderson, *Argyrites*, *Belleymeii*, *Max Kolb*, and *Brongniarti*.

Reported different species of *Odontoglossum*. *O. crispum* (*Alexandrae*) seems not to have any period of rest. The plants make new roots at any season, and may be potted when they require it; but it is generally desirable to have a stated period for potting, in order to save time; and April is as suitable a month as any. Many of the species require large supplies of water, and are best grown in pots that would be thought small for the size of the plant. Fill the pots rather more than half full of drainage, and pot in a compost of equal parts of tough fibrous peat, sphagnum moss, and potsherds. Encourage sphagnum to grow on the surface of the pots. The beautiful *Masdevallia Harryana* is now throwing-up its flowers, which are liable to be attacked by green fly; these ought either to be removed with a small brush or a sponge dipped in water. Fumigating with tobacco smoke is injurious to many *Orchids*.

The temperature of the stove should now be maintained at 65° or 70° at night, with a rise of from 5° to 10° by day; shade from bright sunshine, but do not allow the shading to be down if the day becomes cloudy. The cool *Orchid* house should have similar treatment, with a night temperature of from 50° to 55°.

—J. DOUGLAS.

## TRADE CATALOGUES RECEIVED.

John Harrison, Darlington.—*Descriptive Catalogue of New Roses, Hollyhocks, Dahlias, &c.*

Miller & Stevens, 27, Post Street, San Francisco, California.—  
*Catalogue of Californian and Foreign Seeds, Bulbs, and Plants.*

## PROVINCIAL HORTICULTURAL EXHIBITIONS.

APRIL.		MAY.	
Royal Horticultural of Ireland	16	Glasgow	8 and 9
Cambridgehire	23	Bath	13
Manchester Horticultural	23	Royal Jersey	13
Nottingham Horticultural	29	Royal Horticultural of Ireland	21
Fermoy	30	Cambridgehire	21
		Manchester	22 to 29
		Southampton	25
		Devon and Exeter	29
MAY.			
Royal Oxfordshire	6		
Gloucester and Cheltenham	7		

## TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

BOOKS (*F. Rodda*).—There is no book on shrub-culture alone. "The Cottage Gardeners' Dictionary" includes them.

FLOWER STAND (*W. E. M.*).—If you send your full address and enclose four postage stamps we will obtain a copy of the number.

GREEN'S WROUGHT-IRON BOILER.—Messrs. E. G. Henderson claim, and are entitled to claim, the insertion of the following, but we cannot insert more on the subject:—"In answer to 'N. B.' at p. 203, there is cast iron and wrought iron where its peculiar quality is most wanted. The front of this boiler is of cast iron to avoid scaling or wearing away rapidly. We have for our own experiment three of this boiler, each being set differently, and each working efficiently. The first is without enclosure; the second is in a recess under cover half exposed; the third, of a smaller size, is fully exposed, thus conserving the whole of the radiated heat. To those who have no opportunity of seeing the working of this boiler the following additional features may give a tolerable estimate of its construction:—In dispensing with all outer brickwork it stands upon a separate cast-iron foundation containing the fire-brick. In one stokehole we have had three upright tubulars in succession, and with these we have had to dig out, and pull down, and rebuild brickwork by reason of being cracked or burst out of sockets. Cast-iron apparatus are liable to fracture, which is not the case with wrought-iron ones, the latter affording timely indications of wear necessary for required repair, thereby averting sudden contingencies and after-loss. In reply to 'N. B.'s' inquiry respecting the removal of the two wrought-iron boilers of three years ago, we again remark that they were perfectly distinct from the present one in one very important feature—the absence of water-plates, and were solely removed without fracture, strain, or injury, to be replaced by the present improved patent one. As to its durability, like all other apparatus of new construction, it can only be tested by time."

AZALEAS (*C. H.*).—It is usual for them to emit leaves before blooming.

AERIAL ROOTS ON VINES (*T. Lucas*).—This is caused by an over-moist atmosphere. It is immaterial whether you cut them off or allow them to remain. They do not injure the Vines.

PLANTING A FLOWER BED (*J. Aloysius*).—A square-shaped flower bed that is 9 feet in diameter, and surrounded by dark-coloured paths, would look well with a central clump surrounded by circular bands as you propose. Take *Centaurea gymnocarpa* for a centre, and follow with two rows of purple Beet, then two rows of *Lobelia speciosa*, filling the corners with Golden Pyrethrum and continuing it as an edging all round; or, as you have some *Cerastium*, you might impart additional variety and brightness by introducing it for an edging, filling the corners with *Lobelia*, and putting a broad band of Golden Pyrethrum next the Beet.

SMOKE FROM BURNING WEEDS (*A Young Gardener*).—The occasional burning will not be injurious to the plants in your greenhouse. To prevent the smoke entering in excess, close the greenhouse ventilators during the burning.

RAHIOLEPIS OVATA (*J. R.*).—The description accords well with that of this plant, which is a fine evergreen shrub, having purple berries in autumn. As far as we have experience, it only succeeds in sheltered positions, and requires a peaty or vegetable soil. *Ceanothus dentatus* would only succeed in a warm sheltered position, doing best against a wall with a south aspect.

PROPAGATING BEDDING PLANTS (*A. E.*).—The best method of securing a stock of bedding plants is to obtain a few good plants of the desired kinds now, and at the end of May plant them out in good rich soil, and keep them well supplied with water to encourage free growth. They will by the second or third week of August give you a number of cuttings, which should be inserted in pots or pans, placed in a close cold frame, shaded, and well hardened-off before winter. Wintered in a greenhouse they will afford a number of cuttings from February to April. These should be struck in a mild sweet hotbed.

FORCING PIT AND GREENHOUSE (*Idem*).—We should only be deceiving you were we to hold out any hope of your forcing *Rosea* and similar plants, and using the forcing pit at the same time for Cucumbers, and in summer growing these along with Melons. Cucumbers and Melons do not succeed well together, the latter requiring at times a drier atmosphere than is suitable for Cucumbers, stove plants, and Ferns. In the greenhouse you will do better, only the bedding plants must not be allowed to crowd the Camellias, Azaleas, and hardwooded plants. To answer all your questions would fill a number of the Journal. "Keane's In-door Gardening" gives full instructions for the

year on all the subjects on which you wish for information. It may be had by post from our office for 1s. 7½d.

PELAGONIUM LEAVES YELLOW (*Alma*).—We think the leaves turn yellow in consequence of the syringing, which ought not at this time of year to be practised. We presume the plants have a plentiful supply of air before the sun shines powerfully on the leaves, and that they are not exposed to the sun's rays whilst wet from the condensation of moisture during the night. To obviate the injury that often results from this, a little air should be left on at night, increasing the amount early in the morning. We need not remind you that the plants should be kept free of insects.

TINING VINE SHOOTS (*Idem*).—The shoots should be tied to the under side of the wire as soon as it can be done without breaking them, stopping them at the joint beyond the bunch, or, if they do not show fruit, at the sixth leaf. The laterals are the shoots that proceed from the growth of this year; we should take them off from all the joints except the lowest two and the uppermost one, stopping these at the first leaf, and to one leaf at every fresh growth throughout the season. They will not require tying.

LAURELS, &c. (*J. H. B. H.*).—You are mistaken. In the "Cottage Gardeners' Dictionary" the Bay Tree is *Laurus nobilis*. Common names are not guides. The Cape Gooseberry is not a Ribes. The Laurastine begins flowering often at the end of summer.

COW CABBAGE PLANTING (*J. P., of York*).—You may now procure plants of a nurseryman and plant them out 2 feet apart every way; or, if you do not require them until late in autumn, you may now sow the Oxeart in an open situation, and when they have a pair of rough leaves prick out, and plant out when large enough 20 inches apart. Or you may sow this variety at once in drills prepared as for Swedes, hoeing and thinning the same as for that crop. The crop will be in during September. Plants from an August sowing are best for late summer use. The only after-treatment consists in keeping clear of weeds and earthing-up when the plants are beginning to cover the ground. This latter is not, however, essential, only it keeps them from being so much loosened by winds. Three pounds of seed are required for one acre.

BEEFROOT (*Idem*).—The ground should be well pulverised, drilled, and manured as for Swedes; the seed put in either by drill or dibble; and the plants hoed and thinned to a foot or 15 inches apart. The seed should be sown early in May. Six to eight pounds are required for an acre.

ANTS DESTROYING WALL FRUIT (*S. W.*).—Within our experience we have not noticed them take the young fruit of Plums and Peaches. Sprinkle guano at the foot of the wall occasionally, and syringe the trees on a mild and calm evening with quassia water, made by boiling a pound of quassia chips in four gallons of soft water for ten minutes, and dissolving in it whilst hot 1 lb. of soft soap. When cooled to 90° strain, and apply to the trees, wetting every part.

LILY OF THE VALLEY NOT FLOWERING (*Lily*).—You cannot do any more than you propose—namely, to water them with guano water at the rate of 1 oz. to the gallon, but it need only be given in dry weather. It would not improve the flowering for this year except in the size of the flowers, but would assist in perfecting the crowns for another year. The *Rosea* we should not water until they are in good foliage, and then in dry weather with guano water.

TEN-WEEK STOCK CULTURE (*R. F. B.*).—The plants you have in pots, with four leaves, and very thick, ought to be pricked-out in boxes about an inch apart, not putting them in deeper than the seed leaves, and shading for a few days until established. If left in the pots as they are, it is likely that the majority of them will die-off at the neck. Harden well off, and plant out after the middle of May.

CUCUMBERS STOPPING (*R. T.*).—Take the leaders up to within a foot of the height of trellis, and then stop them. The side shoots should be stopped one joint beyond the fruit.

REPOTTING HOYA CARNOSA, AZALEAS, AND CAMELLIAS (*F. P. A. C.*).—Although the Hoya is flowering, repot it, as it will be making fresh growths, but do not remove more of the old soil than comes away freely from the roots. The Azaleas and Camellias now out of flower should be at once repotted, using for the former a compost of three parts sandy peat, with one part turfy sandy loam and a sixth part of silver sand. The sides of the ball should be loosened with a pointed piece of wood. In potting the Camellias be careful of the roots, not removing more of the ball than any loose soil that can be taken away without breaking them. Employ a compost of equal parts of turfy light loam and sandy peat, with a sixth part of silver sand. Good drainage is needful for all, especially the Hoya.

LABOUR REQUIRED IN GARDEN (*F. J.*).—For the glass you will require a man and boy in addition to the gardener, one man for the kitchen garden, and one for the lawn and flower garden, but a great deal must be allowed for the extent of the flower garden, which you do not state. If no more is taken up in beds and gravel than a fourth of the lawn, one hand will be sufficient. You will require, therefore, two under-gardeners, a labourer, and a boy, along with a head working gardener. The difference of a man rests entirely on the order in which the whole is required to be kept. We have taken for granted everything is to be kept neat and the subjects well cultivated. If not particular as to neatness, a man less will do.

RAMPS OF RAISED BEDS (*Bob*).—Those in the London parks are formed of cow dung, horse dung, and loam worked-up into a thick mortar, and fashioned into the required shape with a trowel.

HEATING A GREENHOUSE.—Seeing a letter in your Journal of April 2nd from a Preston correspondent on heating a greenhouse with gas, I should be glad to communicate with him on the subject, by sending his name and address to—E. L. O., Sunny Bank Cottage, Over Dursen.

PRESERVING WOOD BY CREOSOTE (*C. S.*).—We sent your inquiry to a gentleman who has had experience in the process. He replies as follows:—"The mode I adopt to preserve timber, and give it a brown colour is to place it in a wooden trough with stones or some other contrivance to keep the wood under the creosote. I then ladle the boiling creosote from a small iron boiler on to the timber, where it remains until it is nearly cold. I then allow the creosote to run out of the trough into the boiler, where it is again boiled. It is ladled on again, and allowed to remain half an hour, when it is drawn off again into the boiler. The wood is then taken out and set upright; it is dry in a few hours, and fit for use the following day. The last bathones I constructed was 50 feet by 15; the expense of labour, creosote, and fuel was 10s."

TRAINING WIRE (*A. D.*).—It is quite immaterial whether you use copper or galvanised iron wire inside your greenhouse, as there would be in your case no difference in the price.

STOVE FOR GREENHOUSE (*T. W. C.*).—Apply to Messrs. Swan Nash, & Co., 4, Newgate Street.

INSECTS (*Miss C. P. G.*).—The insect you have sent, found on a Beech tree, is the not uncommon red velvet mite (*Trombidium holosericeum*), which feeds on minute insects, probably in this case on the very small young white Coccid which often abound on that tree.—I. O. W.

NAMES OF PLANTS (*A. B. P.*).—1, *Sparmannia africana*; 2, Not a *Myosotis*, though often so called. It is *Omphalodes verna*. (*P. W.*).—The "Plant of Life" is *Bryophyllum calycinum*. (*W. H. B.*).—If you knew *Mesembryanthemum*, you would know that your specimen is quite insufficient for determination. It may be *M. albidum* or *M. acinaciforme*; 3, *Pteris aquilina*; 4, Apparently root leaves of *Sisymbrium officinale*. (*J. P., H. M.*).—Cannot name without flowers. (*A. Fred.*).—There are no numbers attached to your six very bad specimens. (*M. A. W.*).—*Iris tuberosa*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### THE FOWLS FARMERS AND COTTAGERS SHOULD BREED.

I SEE that the Great Yarmouth Poultry Association intend, at their next Exhibition, to provide a class for farmers and cottagers exclusively, to induce them to breed a good fowl for two purposes—viz., laying and the table. The Dorking is, I observe, mentioned, which I feel sure will be regretted by many—first on account of its laying, and, secondly, the difficulty experienced in rearing the chicks. I had tried them for many years, and was at last so disgusted with them that I commenced crossing by getting rid of the Dorking cock and substituting it by a Dark Brahma. We made it a practice to change the male bird every year, so as to avoid the error into which many fall of breeding-in. Since the change has taken place (this is the third season), eggs have been plentiful all the year round, and the chickens have been numerous, and, what is better, they are much hardier, and arrive at maturity for spring and early summer use, when they command good remunerative prices, much earlier than either of these pure breeds would do. They are so like the Dorking breed that some would not be known from that class of fowls except by the smallness of the comb.

It is not stated in the notice if the class will be confined to the county or open to the kingdom, neither is any idea given as to the age of the fowls. I think the latter is a most essential point; as some, although they may promise to be quite as good, (yet there is nothing to guarantee that such will be the case), may through being considerably older, comparatively speaking, carry the sway, when, in fact, they are inferior to their companions, only that age has told in their favour. I consider their age should be limited to four or five months for the lateness of the season, fowls being required then much larger than earlier in the year. The subject is one of the highest importance in the poultry world, and should be thoroughly discussed.—HENRY J. GOODENOUGH, *Ealing*.

### CROSSING BRAHMAS WITH HAMBURGHES.

THERE seems a prejudice against crossing sitters with non-sitters which I do not share, and in defence of my opinion I send you particulars of a cross-bred pullet which I think are somewhat extraordinary.

Parent birds: cock, Dark Brahma; hen, Golden-spangled Hamburg. Hatched the third week in August, 1873, began to lay January 29th, 1874, and laid every day until February 22nd, when she became broody and was set upon nine eggs, chiefly Brahmas and Houdans. She sat well and closely, but owing to accidents only reared three chickens, which were hatched on March 14th. She was cooped with them for ten days and then left at large, and she began to lay again on April 11th, and has laid again this day, the 12th. She has not deserted her chickens (two Houdans and a Brahma), and only leaves them for a short time each morning when she lays. All the other pullets of the same brood lay well, and one of them has reared a brood and another is sitting. The pullet is in body and feathers a small-made Brahma with clean Hamburg legs. The shells of her eggs are dark in colour, and the yolks dark and rich. The cockerels of the same brood were ready for killing about January 24th, and were large birds of very good flavour.—A HIGH FEEDER.

### FEEDING FOWLS AT SHOWS.

I OBSERVE in your issue of the 2nd inst. a letter, in reply to mine in the above matter, from Mr. Humphreys, in which he states I knew nothing about what I was writing of.

I repeat that the feeding, at least of the Bantams, at the late Northampton Show was anything but judicious, and from the proof I have I am quite as competent to form an opinion as Mr. Humphreys. He states that the birds had not time to stuff themselves with Indian corn and barley, yet almost in the next sentence he admits one of my birds was, as he puts it, "a little too full of food!" and if my bird had time to get "a little too full of food," why not the rest? Had it not been for Mr. Leeming, who was in charge of my birds, and whose duty it was to

see to them, very likely the Committee would not have noticed the bird, and therefore the great credit Mr. Humphreys imagines is due to his Committee for the attention they paid my birds, is entirely due to Mr. Leeming who had charge of them.

I would not like for a moment to doubt the efficiency of the Judges who officiated in forming an opinion as to overshadowing or overfeeding, but facts are facts, and I think it will be difficult to prove that it was overshadowing most of the birds were suffering from, as really many of them had not been shown for a considerable time.

I am well aware that to please everybody in feeding would be exceedingly difficult, and can sympathise with Mr. Humphreys, from the little experience I have had in regard to the way exhibitors write to secretaries as to the requirements of their birds; yet, as a rule, Bantams do not receive proper attention from committees of shows as to feeding, and in this respect I did not wish to convey the idea that my remarks were at all confined to Northampton. I know how often it is the case that exhibitors after penning their birds, and having given them the last "touch-up" before the judges commence their duties, on coming back again to give them another peep find to their horror the pen over-supplied with Indian corn, and its occupant suffering intense pain in one corner of the pen, with its crop blown out like a Pouter Pigeon. I am sure Bantam exhibitors will bear me out, therefore, that sufficient attention is not paid them.—W. FORRESTER ADDIE.

[We think nothing more need be written on this.—Eds.]

### DOVER AND CINQUE PORTS POULTRY SHOW.

THE third annual Exhibition was held on the 8th and 9th inst. at the Market Building, a place much better adapted for the purpose than that in which the Show took place in the previous year. The competition was confined to the county of Kent, and we were very pleased, under the circumstances, to see so large an entry, as showing the great interest that is manifested in poultry in this locality.

The Coloured *Dorking* class was good. The first-prize pen was grand, and in much better condition than we last noticed it. The second and third-prize pens contained neat specimens, and were properly placed. The Any variety *Dorking* class, with one or two exceptions, was not equal to the preceding. The first-prize pen, a pair of Silvers, was good; the second, a fine pair of Cuckoos, in bad condition. The others were only of moderate quality. The *Spanish* class contained a few good birds; the first-prize cock had a nice face, the white was of good quality, but we did not admire his comb; the hen was good. We liked the third-prize pen better; the cock here had a splendid face and a very neat comb well set upon the head, but he was in such bad condition that we quite agree with the Judge in not placing him in a more prominent position. The *Cochins* were unusually numerous, the first prize going to a pair of Whites in beautiful condition, and leaving nothing to be desired from the laundry; the second prize was awarded to some good Buffs; and the third to a pen of very poor Blacks. With the exception of the first two pens we could find nothing worthy of notice from the Judge. The *Dark Brahmas* were well represented; the first-prize pen was very superior, the cock being a good bird with a mottled breast, and we were gratified the Judge did not discard him in favour of some of the black-breasted birds, which seem to be so much preferred at the present time; his partner was a grand pullet, well pencilled. The second-prize cock was white in the tail, but otherwise good; the hen very fine. The third-prize birds we did not like; the cock was moderate, the pullet small, light in colour, and deficient in markings. Two or three good hens were to be found in other pens, but their companions were poor. The *Light Brahma* class was not good. The first-prize cock was the best; he was good in colour, but rather leggy; the hen we did not like. The *Game* classes were excellent, the competition between some of the pens being very close. A fine pen of *Brown Reds* came first, a pretty pen of *Blacks* was second, but from appearances we think we should have placed the *Brown Reds* shown by Mr. Jeken in this position. In the *Game Any variety* class an extraordinary pen of *Piles* came first, and had the hen been in better condition we have little doubt they would have secured the cup; the second and third prizes went to *Duckwings*. The *Hamburgs* were a wretched collection; in the *Pencilled* class the first prize and a cup were awarded to some Silvers, the cock in a very dirty condition, very small, with a bad comb and very discoloured in the earlobe; he had only good sickles to recommend him; the hen was a moderate one. The second and third were *Gold*; they were not good, but we preferred them to the first. The *Spangled* class was a little better, and we should have liked to have seen the cup given to the first-prize pen in this class. The *French* class was very fine, Mr. Dring's well-known pens of *Houdans* and *Crève-Cœurs* being first and second, but in this instance their positions were transposed, the *Houdans* beating the *Crève-Cœurs*. The *Any variety* class contained no novelty, as the winners were not of remarkable quality. In the *Game*

**Bantam** class Mr. Marsh secured all the prizes for Black Reds. The cock in the first-prize pen was a very neat specimen, fine in head, beautiful in colour, with good sickles, and we think a great mistake was made in not giving the cup to this pen, the Brown Reds that obtained the cup being but of average merit. In Bantams Any variety a good pen of Blacks was first, the rest poor.

**Ducks** were splendid. The winning Aylesburys were very large and pure in colour. The Rouens were fine; but here the best pen could have been made by placing the Duck in the first-prize pen with the drake in the third.

The special class for *Houdans* bred in 1873, and open to subscribers only, was a very interesting one. The first award appeared to give general satisfaction, but opinions were very divided as to the positions which the second and third-prize pens should have held.

The *Pigeon* entries were not so numerous as those of last year. The competition in *Carriers* was confined to three entries; *Pouters* obtained only one, and *Tumblers* two; they were not of very grand pretensions. *Fantails* were more fortunate: here we had six entries, three of which were well deserving notice. *Dragoons* were very inferior, the first-prize pen, a pair of Blues, being very white in the rump. The *Barb* class contained a good pair of Yellows, which were placed first. In the *Homing Antwerp* class Mr. Marsh showed some strong-looking birds, which had every appearance of being good workers.

The Show was well managed, and the Secretary and Committee indefatigable in their endeavours to carry out the arrangements satisfactorily for the comfort of the visitors.

**DOCKINGS.—Coloured.**—Cap, R. Cheesman, Westwell, Ashford. 2. E. Rice, Sandwich. 3. G. W. Greenhill, Ashford. 4. G. W. Greenhill; W. S. Marsh, Winkland Oaks, Deal; C. Ratcliffe, Womansdold, Canterbury. c. C. Ratcliffe; Mrs. Brassey, Hastings. *Any other variety.*—1. F. Cheesman, Ashford. 2. R. Noble, Canterbury. 3. C. Ratcliffe. c. F. Cheesman; J. Roulidg, Petham.

**SPANISH.**—1. W. Brown, Dover. 2. J. Francis, Hildenborough. 3 and 4, Mrs. Brassey.

**CUCHIN-CHINA.**—Cap, R. S. Woodgate, Pembury, Tunbridge Wells. 2. C. M. Stickings, Wye. 3. J. E. C. Hassard, Sheerness. *vhc.* Rev. F. T. Scott, Birchingdon. *hc.* Rev. W. C. B. H. D'Aeth, Wincingbury; G. Dowker, Wingham; Miss Chesbury, Barton Court, Canterbury; Mrs. Brassey; F. E. Arter, Barham; Col. F. C. Hassard. c. Sir S. Lakeman; C. Kingsford, Buckland; W. White; J. Body, Wittersham, Ashford.

**BRABMAS.—Dark.**—Cap and 3, W. Jacob, Shepherdswell. 2. F. Lake, Rodmersham. *hc.* J. Harvey, jun., Thaxington; Sir S. Lakeman. c. F. Lake; H. Kennett, Canterbury; J. Long, Bromley common; F. Cleaver, Sittingbourne. *Light.*—1. Capt. W. Saville, Wye. 2 and 3, G. Dowker. *hc.* Rev. F. T. Scott, Shepherdswell; Capt. W. Saville. — *Brassey*: J. Long. c. Rev. F. T. Scott; Lady Oxenden, Barham; F. Lake.

**GAME.—Black and Brown-breasted Red.**—Cap, W. Foster, Deal. 2. G. Jeken, Martin, Dover. 3. J. A. Harms, Ashford. *vhc.* G. H. Fitz-Herbert, Sevenoaks. *hc.* F. Waide, West Farley; J. Jeken, Eltham (2); C. J. Plumptre, Wingham. c. E. L. Elliott, Ashford. *Any other variety.*—1. W. Foster, Deal. 2 and 3, J. Chittenden, Willesborough. *vhc.* E. Rice. *hc.* E. Rice; W. Foster. c. G. W. Fitz-Herbert.

**HAMBERGERS.—Gold and Silver-pencilled.**—Cap, W. Foster. 2. C. J. Plumptre. 3. W. H. Birch. *Gold and silver-spangled.*—1. C. Brown. 2. E. J. Rogers, 3. F. Cheesman.

**FRENCH.**—Cap, 2, and 3, W. Dring. *vhc.* Rev. N. J. Vlieland, Stalisfield; T. G. Ledger, Folkestone. *hc.* W. Dring; H. Boissier, Penshurst. c. T. Marsh, Tonbridge Wells.

**ANY OTHER VARIETY.**—1 and 2, R. S. Woodgate. 3, J. Long. *hc.* S. Smith. *GAME BANTAMS.—Black-breasted Red.*—1, 2, and 3, W. S. Marsh. *hc.* Master Sandford, Martin, Dover; H. H. Stickings, Ashford. c. J. Austen. *Any other variety.*—Cap and 2, J. Long. 3, W. S. Marsh. *vhc.* Master Sandford. *hc.* W. C. Haunce, Canterbury. c. J. Crowhurst.

**BANTAMS.—Any other variety.**—1, J. Ware, jun., Faversham. 2. S. Smith. 3. Rev. F. T. Scott. *vhc.* W. V. Lister, Walton, Easby. *hc.* R. P. Solly, Wedington, Ash; G. Ramsden, Ashurst, Tunbridge; K. S. Woodgate; G. P. Ladd, Canterbury. c. Mrs. Brassey.

**DUCKS.—Aylesbury.**—1 and 2. — Jacob, 3. F. Lake. *hc.* E. F. Arter, Barham; M. Sandford, Mar in, Dover. *Rouen.*—Cap, J. Harvey, jun. 2. S. Court, Whitfield, Dover. 3. F. Cheesman. *hc.* C. Ratcliffe. c. F. E. Arter; J. Austen, Denton, Canterbury; Mrs. Brassey; J. W. Watson, Nonington. *Any other variety.*—1, E. S. Woodgate.

**TURKEYS.**—1, F. Cheesman, West Farley. 2 and 3, C. J. Plumptre. *hc.* Mrs. Brassey. c. M. Sandford.

**SELLING CLASSES.—Cock or Drake.**—1, J. Harvey, jun. 2. W. Foster. 3. W. S. Marsh. 4. W. Dring. *hc.* J. Blecher, Dover; C. Ratcliffe; C. Kingsford; W. Jacob; W. S. Marsh; E. Rice (2); W. Foster. c. W. White, Canterbury; G. Dowker (2); R. Perrey, Beckley, Ashford; R. Cheesman; J. Body. *Hens or Ducks.*—1, W. Dring. 2. F. Cheesman. 3. W. Jacob. 4. W. C. H. H. D'Aeth. *hc.* W. Brown; W. White; W. V. Lister, Walton, Easby. c. M. Sandford; A. Gardner; E. Rice; R. Cheesman; C. Ratcliffe; J. Body.

**HOUDANS.**—1, Mrs. Vallance, Sittingbourne. 2. M. Sandford. 3. W. Dring. *hc.* W. Dring; R. B. Neame, Faversham. c. F. Lake; W. Perkins.

#### PIGEONS.

**CARRIERS.**—1 and 2, M. Martin, Canterbury.

**POUTERS.**—1, M. Martin.

**TUMBLERS.**—1, M. Martin. 2, W. Foster, Deal.

**FANTAILS.**—1 and 2, G. Mills, Dover. *hc.* M. Sandford; M. Martin.

**DRAGONS.**—1, M. Martin. 2, M. Sandford.

**BARBS.**—1, M. Martin. 2, R. N. W. Stratford, Addington Park, Maidstone.

**ANTWERPS.—Homing.**—1, J. J. L. Criland, Beckenham. 2, W. S. Marsh. *hc.* E. Mills, Canterbury; M. Sandford.

**ANY OTHER VARIETY.**—1 and 2, M. Martin (Isabellas and Swallows). 3, T. Homes, Lower Sydenham.

**SELLING CLASS.**—1, M. Martin (Dragoons). 2, T. Homes. 3, W. Foster (Carriers). *hc.* M. Martin; Col. Hassard (Carriers); W. Foster (Carriers).

**JUDGES.—Poultry:** Mr. E. Hutton, Pudsey, Leeds. *Pigeons:* Mr. F. Esquilant, Brixton.

## LEEDS AND WEST RIDING PIGEON, RABBIT, AND CAGE BIRD SHOW.

This was held in the Music Hall at Leeds on the 7th and 8th inst., and as regards entries was a great success. Owing to some mistake as to date, the large hall which had in the first

instance been engaged could not be had, and two of the side rooms were called into requisition. These being small, the pens had to be placed three and four tiers high, and were still somewhat cramped, but for the limited space they were well arranged—the Pigeons and Cage Birds in one room, and the Rabbits and Cats in another. Considering also that about three gentlemen only had the affair in their hands, while we were there the whole seemed to be well managed, and great anxiety for the welfare of the specimens entrusted to their care was displayed by the Managers.

The *Cage Birds* were a fair entry, and the quality seemed good, although, no doubt, many of the best specimens are now drafted-off for stock purposes.

*Pigeons* were a grand display, the *Pouters*, which were single birds of any sex, being a capital class. A smart long Blue cock took the first prize and cup for the best of four classes. Second came a large good-limbed White cock, but the pens were too small for the birds to play-off in. In *Carriers*, Black cocks won both prizes, and the class was good, pen No. 2 only requiring the manipulations of the expert to bring it to the front. The first was a heavy bird, but somewhat short-necked; the second long, but not so well made-up. In *Trumpeters* foreigners were to the front, and the class was very good, one bird of the old type also coming-up well. *Owls* were a good and heavy class, containing twenty-nine entries, mostly of good character; the first going to a perfect Silver-blue hen, and the second to as good a young Blue cock, birds from the Sister Isle pressing hard upon the winners. For *Fantails* the pens were too small, and some birds were not in the best bloom; the winners were good but somewhat large. Of *Tumblers* there were nineteen entries, most of which were Almonds, although there were some very good Agates. The prizes went to Almonds, which were almost perfect in marking and good in head properties. *Jacobins* were not numerous but very good, a Red cock of high order first, with an excellent small hen second, the latter only leasing in hood, which scarcely came so far on the face. *Turbits* were good; a perfect Blue cock was first, with a Yellow only a little coarse second. *Barbs* were capital, the Dun cock to which the first prize was awarded being very broad in skull; second, Red, much younger but very promising. Many of the others also received notice in the list. In *Nuns* the winners were the nearest approach to perfection ever yet produced, and free from trimming in all respects. In *Magpies* a pretty little Red cock took first and cup for these two classes, while an excellent Yellow was second, and many others noticed. *Archangels* (nine entries), were but moderate. *Dragoons* were fine in all respects, scarcely one had being shown; the first was a Blue cock as nearly faultless as possible, so was the second. One-half of the birds were noticed, and the cup for the section awarded to the first-named bird. Long-faced Antwerps had thirty-six entries, but many were too spindly in beak, while those of the best merit as Antwerps were somewhat shorter in head than is desirable. A very handsome Blue-Chequer cock stood first, with a rather dull-coloured but otherwise good Red-Chequer second. Short-faces were, with the exception of about eight birds, altogether deficient in character of head and beak, but the two winning birds, both Silver Duns, were perfect, and we were glad to see one of the fathers of the fancy, Mr. John Crossland, to the front here. In the *Variety* class a pair of exquisite *Isabells* were first, *Blondinettes* second, *Ice Pigeons* third, and *Florentine Runts* fourth. The *Selling* class contained some good cheap birds, first being plain Ice; second, Black Barbs; third, Blue Owls; and fourth, Black Owls.

A cup offered for the best *Cat*, was won by Mr. Horner's handsome *Tortoiseshell*, which is as perfectly marked and as sound in colour as a high-class Almond Tumbler; and the second was a large long-woolled Yellow-and-white Angers; third a White Angora; and fourth a large Grey Tabby; while several other excellent *Tortoiseshell* and *Tortoiseshell-and-white* were highly commended; but there was nothing of note in the rest of the classes.

Of *Rabbits* there was a very good entry, but many of the pens were so placed as to cause great difficulty in the arbitration, and the attendance was not all that could be desired, the staff being too small to allow of much assistance for the Judges. In *Lops* the first was a fine *Tortoiseshell* doe, which was shown in nice condition, but the *Rabbits* in this class did not measure up to what we have seen of late, four of the best being only 21 inches by 41 in ear. Of *Himalayans* there were twenty-seven entries, but the exceptions were those with all the points of tolerable colour, although many were very good in head but bad in feet, while the first-prize animal was one as nearly perfect as we have ever seen; all that were of any note were named in the prize list. The *Silver-Greys* numbered nineteen, but many of the best were very deep in the moult, while the prize-winners were really good in all points, uniform in colour, the proper shade, and beautifully silvered. No. 15 without doubt got into its proper position. The specimens, we are glad to say, show a tendency to a greater size than has generally been attained. In the *Other variety* class were seventeen entries,

eleven of which were named in the prize list, the first being the best Dutch specimen that we have yet seen for colour, marking, and size. The second was a very large long-wooled Angora, scarcely so fine in wool as some of the pygmies alongside of it. Some capital Belgian Hares were among those noticed. The Selling class was very large, and many more prizes might have been distributed. The first was a very good Sooty Fawn buck of great length of ear and capital in style; the second a Himalayan, quite equal to most of those in the class for the variety; the third a very good Belgian Hare. Many of the specimens were readily sold by auction, some being purchased at very good prices.

## CAGE BIRDS.

**BELGIAN.**—*Yellow, Buff, or Ticked.*—1, J. Moorhouse, Little Horton, Bradford. 2, T. M. Reid, Halifax. *vhc.* W. Shackleton, Ilkley. *hc.* T. M. Reid. *c.* R. Ushers, Ilkley.

**NORWICH.**—*Yellow, Buff, or Ticked.*—1 and 2, E. Orms, Derby. *hc* and *c.* J. Besson, Derby.

**LIZARD.**—*Gold or Silver-spangled.*—1 and 2, M. Watson, jun., Darlington. *vhc.* S. Bunting, Derby. *hc.* T. M. Reid. *c.* J. Stevens, Middlesbrough. **YORSHIRE.**—*Clear Yellow.*—1 and 2, W. Hutton, Baildon, Leeds. 2, J. Myers, Baildon, Leeds. *hc.* L. Belk, Dewsbury. *Ticked or Uneven-marked.*—1, P. Rawnsley, Bradford. 2, J. Stevens. *vhc* and *c.* L. Belk. *hc.* T. M. Reid.

**MOLE.**—*Goldfinch.*—1, W. Hutton. 2 and *vhc.* R. Hawman, Middlesbrough. *hc.* W. & C. Burniston, Middlesbrough. *Any other variety.*—1, J. Stevens. 2, W. Hutton. *Extra.* W. Yeoman, Leeds. *hc.* R. Hawman.

**LINNET.**—1, J. Stevens. 2, R. Hawman. *hc.* S. Bunting. *c.* W. Carriek, Middlesbrough.

**ANY OTHER VARIETY.**—1 and *c.* L. Belk. 2, Barwell & Sons, Northampton. 3, J. Hall, Widdall Wood, Shipley. *vhc.* Potty & Cuss, Castlegate, York. *hc.* W. & C. Burniston.

**SELLING CLASS.**—1, E. Orme. 2, J. Bexson. 3, W. Brownbridge, Leeds. 4 and *c.* Cleveland & Paley, Wigston. *vhc.* W. & C. Burniston.

## PARROTS.

**GREY.**—1, W. Clag, Leeds. 2, G. Langthorn, Leeds. *hc.* Mrs. E. Thompson, Leeds. *c.* Miss F. Seaton, Leeds.

**ANY OTHER VARIETY.**—1, S. Bunting. 2, W. Brownbridge. *vhc.* J. S. Harrison, Spalding. *hc.* W. B. Boden, Hartlepool. *c.* W. & C. Burniston.

## PIGEONS.

**POUTERS.**—*Cock or Hen.*—Cup, W. Harvey, Sheffield. 2, W. Nettage, Northampton. *hc.* A. Spencer, Driffield (1); J. P. Fawcett, Whitley; T. Rula, Durham; E. Horner, Harewood, Leeds. *c.* Miss K. Dows, Boston.

**CARRIAGES.**—*Cock or Hen.*—1, E. Horner. 2, H. Yardley, Birmingham. *vhc.* J. Pollard, Leeds. *hc.* Miss F. Seaton, Leeds; J. Pollard; G. E. North, Leeds; A. F. Umpleby, Boroughbridge. *c.* P. R. Spencer, Hereford.

**TAUPERES.**—*Cock or Hen.*—1, T. Rule. 2, W. Harvey, *hc.* R. J. Smith, York. 3, H. A. Ayton, Saltburn; J. Ledgers, Bottle, Liverpool. *c.* R. J. Smith; H. Yardley; C. Auton, York.

**OWLS.**—*English.*—1 and 2, W. Binns, Pudsey. *vhc.* W. G. Henry, Sandymout, Co. Dublin. *hc.* Miss F. Seaton; Ward & Rhodes, Otley (2); A. F. Umpleby; J. Gardner, Preston. *c.* G. W. Dutton, Chester; A. A. Dodds, North Shields; L. Crossley, Halifax; H. G. Pool, Bradford.

**FANTAILS.**—*Cock or Hen.*—1, E. Horner. 2, J. F. Loversidge, Newark. *vhc.* J. C. Loversidge; T. Rule, *hc.* J. Thompson, Bindley. *c.* W. J. Warhurst.

**TUMBLEAS.**—*Cock or Hen.*—1, J. Gardner. 2, T. Rule. *vhc.* W. Brydone, Langton Manse, Dunse; E. Horner. *hc.* H. Cockton, Middlesbrough; H. Yardley; W. Brydone; C. Auton; W. Harvey. *c.* J. Pollard; Miss K. Dows; G. F. Fryer, Leeds.

**JACOBIANS.**—*Cock or Hen.*—1, J. Thompson. 2, T. Rule. *vhc.* J. Thompson; A. A. Vander Meersch, Tooting. *hc.* J. Young, Bishop Auckland; E. Horner.

**TEMBRAS.**—*Cock or Hen.*—1, W. Croft, Killinghall, Ripley. 2, H. G. Poole, Bradford. *hc.* J. Young; J. Gardner; J. Thompson; H. G. Poole. *c.* W. Croft; E. Horner.

**BARBS.**—*Cock or Hen.*—1, W. Harvey. 2, Miss F. Seaton. *vhc.* J. C. Boothby, Stockport; W. Brydone. *hc.* Miss F. Seaton; G. W. Dutton, Chester; H. Yardley; P. R. Spencer; J. Thompson. *c.* J. P. Fawcett; E. Horner.

**NUNS.**—*Cock or Hen.*—1, Miss F. Seaton. 2, Rev. A. G. Brooke, Shrawardine Rectory, Shrewsbury. *vhc.* Miss F. Seaton. *hc.* J. Young, Bishop Auckland; A. G. Brooke; W. Croft. *c.* Miss F. Seaton; A. A. Vander Meersch; W. Croft.

**MAPOIES.**—*Cock or Hen.*—Cup, Miss F. Seaton. 2, M. Ord, Sedgfield, Durham. *vhc.* J. Pollard; E. Horner. *hc.* Miss F. Seaton; F. W. Webb, Lower Sydenham; E. Horner. *c.* Miss F. Seaton.

**ARCHANGELS.**—*Cock or Hen.*—1, H. Yardley. 2, Miss F. Seaton. *hc.* H. W. Webb; E. Horner. *c.* H. W. Webb; J. Thompson.

**TEACUPS.**—*Cock or Hen.*—Cup and *vhc.* W. Sefton, Blackburn. 2, J. Gardner. *hc.* Ward & Rhodes; H. Yardley; A. A. Vander Meersch; W. Sefton (2); W. Harvey. *c.* H. Yardley.

**ANTWERS.**—*Long-faced.*—*Cock or Hen.*—1 and *vhc.* H. Jennings, Allerton, Bradford. 2, W. Lund. *hc.* Ward & Rhodes; W. J. Wilson, St. Clements, Ipswich; H. Webber, Leeds; H. Jennings; C. Prior, Hereford. *c.* G. Lister, Harewood, Leeds.

**ANTWERS.**—*Short-faced.*—*Cock or Hen.*—1 and *c.* J. Crossland, Wakefield. 2, J. Gardner. *vhc.* J. Gardner. *hc.* W. Binns. *c.* Miss F. Seaton; M. Hackforth, Preston; G. Crand, Leeds. *c.* J. Crossland.

**ANY OTHER VARIETY.**—1 and 3, Miss F. Seaton. 2, H. Yardley. 4, W. Binns. *hc.* W. H. Silvester, Sheffield; W. C. Dawson, Otley. *c.* Miss F. Seaton; W. H. Silvester.

**SELLING CLASS.**—1, Miss M. Tuna, Cliffe. 2, W. Binns. 3, H. Cockton. 4, W. Brydone. *vhc.* J. Thompson; A. T. Wells, Ripon. *hc.* W. G. Henry; C. H. Sharp, York; R. Thorne, Rochdale; E. Horner; W. C. Dawson. *c.* F. S. Daines, Walsall; P. R. Spencer; A. Thewlis, Maltham; J. T. Hinks, Humberstone (2); W. C. Dawson.

## RABBITS.

**LOP-EARED.**—*Buck or Doe.*—1, J. Irving, Blackburn. 2, S. A. Garside, Ormakirk. *vhc.* G. S. Burton, Leeds. *hc.* G. S. Barton; T. Myton, York (2); Miller and Adams, Bradford.

**HIMALAYAN.**—*Buck or Doe.*—1, H. White, Rochdale. 2, E. Robinson, Kettering. *vhc.* Cawood & Leggett, Thorne; J. Battersworth, Rochdale; C. G. Mason, Rochdale. *hc.* J. S. Barton; B. Newsome, Holbeck; J. Hallas, Huddersfield; W. Owen, Kettering; J. S. Boyle, Blackburn. *c.* J. Battersworth.

**SILVER-GAY.**—*Buck or Doe.*—1, J. H. Brand, Barton-on-Humber. 2, Miss Mortimer, Rudhall, Ross. *vhc.* B. W. Mason, Hall; A. Hudson, Hall. *hc.* F. J. Allpress, Canonbury Square, London; J. Hallas; G. P. & R. Hackett, Haverstock Hill, London; A. Hudson; J. Boyle.

**ANY OTHER VARIETY.**—1, B. W. Mason. 2, H. Sweetnam, Fulford, York. *hc.* T. Garner, Kinsworth, Northampton; S. Ball, Bradford; J. Irving; G. E. Hutton; Miss K. Dows; J. Boyle. *c.* T. W. Clementson, Helham; J. Hallas; G. S. Barton.

**SELLING CLASS.**—1, F. Sabbage, Northampton. 2, W. Donkin, Driffield. 3, Miss K. Dows. 4, H. Hacock, Northampton. *vhc.* W. S. Crossland. *hc.* G. S. Burton; G. P. & R. Hackett; F. Banks, Doughty Street, London; F. Sabbage. *c.* J. Armstrong, Leeds; J. Hallas; W. Hey, Rochdale; A. W. Whitehouse, Northampton; G. E. Hutton.

## CATS.

**ANY VARIETY.**—1, E. Horner. 2, E. & E. M. Rye, Rochdale. *vhc.* F. J. Goodall, Hanley; Miss L. Wood, Harewood, Leeds. *hc.* J. Gaukroger, Leeds;

J. Dyaon, Tadcaster; J. Hunter, Leylands, Leeds; E. Baxter, Dalston, London. *c.* W. Pullan, Holbeck; J. B. Butler, Leeds; E. L. Leeds; S. Smith, Leeds (2); J. H. Vevers, Leeds; J. Hardcastle, Leeds; F. Turner, Kettering; Miss L. Wood; G. F. Dawson.

**HEAVIEST.**—1, Miss M. Tuna. 2, J. Dyaon.

**KITTEN.**—1, M. Shaw, Leeds.

**JUNCOS.**—*Pigeons, Rabbits, and Cats.* Mr. E. Hutton, Pudsey; *Cage Birds.* Mr. Calvert, York.

## COMING RABBIT SHOWS.

May will soon be here, bringing with it some more Rabbit shows. The first of these, Haslingden, to take place on the 6th, promises to be a good one, if seven classes and liberal prizes have anything to do with it. The classes are well divided amongst the principal varieties. Entries close on April 23rd. The ninth Epworth Show follows on the 8th. It gives only two classes, one for Lops the other for Any other breed, and two prizes in each class. The entries close on April 25th. The Wharfedale Agricultural Society will hold its seventy-sixth meeting at Otley on May 9th. The Rabbits have four classes—viz., one each for Lops, Angoras (miscalled Angolas), Himalayans, and Any other variety. Entries to be made before the 25th. Accrington, on May 21st, has five classes, including a Selling class. The entry is low, and finally closes on May 7th.

These, I think, are all the shows for May, which it is to be hoped will be well supported, to allow more classes and prizes in future.—A RABBIT FANCIER.

## ARE NOISES NECESSARY TO MAKE SWARMS SETTLE?

In olden times it was a custom of the village bee-keepers of England to let their neighbours know that a swarm was on the wing by making great noises with pokers, shovels, kettles, and frying-pans, believing that these noises gave the party making them a legal right to claim and hive the swarm wherever it alighted. In course of time the people imagined that such noises frightened the bees and prevented them from flying away. Now many use their pokers and frying-pans to make the bees swarming think that it thunders, and some throw sand up among them to make them think it rains. These makers of artificial thunder and rain would, methinks, spend their time more advantageously both to themselves and their bees in trying to gain a little common sense. Before a swarm leaves its hive the bees select or fix on a place to alight upon, and when on the wing they are uninfluenced by stupid people making such stupid noises.

The question arises in the minds of many sensible thinking bee-keepers, why a swarm alights on a bush or branch of a tree on which it never can find a home or do any good, and on which it never remains long. If it remain there many hours scouts are sent out to seek a more comfortable and convenient dwelling place. If not hived it will not remain long on the branch of a tree. Why it alights there at all, is a question which probably no one can answer. Someone has dropped the idea that the bees congregate there with ulterior intentions—settle there for a time before they go to a more abiding habitation in a house or wall, or hollow of a tree, which has been previously chosen for their abode. I do not believe that the bees have "ulterior intentions" when they swarm on a tree, and could give some valid reasons for my unbelief; but preferring the profitable and practical part of bee-keeping to the theoretic and fanciful, I will not go further into this subject here. Philosophers tell us that the dogs (pointers and setters) of sportsmen are, in their natural state, beasts of prey; that when they scent game they halt for a moment or two on purpose to spring upon it; that men, knowing that these dogs are docile and teachable, train them to "stand steady" instead of halting. Thus the comma is converted into a full stop. When swarms halt and congregate on a tree, wise bee-keepers speedily put them into hives, and thus secure "full stops."—A. PETTIGREW.

**IMPORTATION OF EGGS.**—The consumption of eggs still increases. In the last three months the value imported was £569,270, against £530,787 in the corresponding period last year. In the month ended the 31st ult. the value imported was £310,455.

## OUR LETTER BOX.

**CATALOGUES (Game Cock).**—Write to the Secretaries of the two shows you name.

**DOMINIQUE (Jack).**—We are most anxious to give every information to our readers, but we never recommend anyone to supply things that are daily advertised in our columns. We can only refer purchasers to them.

**KEEPING EGGS FOR SITTING (Selkirk).**—You may keep eggs three weeks and then hatch them, or even a month, but we have always found the fresher the eggs that are put under a hen the stronger the chickens are. A hen that steals her nest is probably laying for from fifteen to twenty days, and yet hatches all her eggs. We think it cheaper to buy a broody hen when we want one, at an apparently large price, than to lose our time by waiting for one of our own to become so.

**REMEDY FOR THE PIP (J. E. F.).**—We believe you will find castor oil the best remedy. Give a tablespoonful every alternate day for a week. Let them have camphor and wormwood in their water, and be fed on soft food till they recover their condition.

**BREED TO BE KEPT (Amateur).**—You will be disappointed if you seek for Crève-Cœurs and Houdans as small fowls. They are both good layers, but neither are sitters. If, therefore, you purpose keeping but one breed they will not do. We could answer more easily if you described the run you can give. To live in confinement you will find nothing better than Cochins or Brahmas. They are hardy, their chickens are easily reared, and they are average layers. Golden and Silver-pencilled and Spangled Hamburgs are very handsome and excellent layers, but they do not sit. Game are very good, but they are very quarrelsome. Dorkings are as good birds as any if you have a run. This is the best season of the year to put eggs under a hen to begin a fresh stock with.

**ROVEN DUCKS LAYING (Quack).**—We fear you do not get all the eggs that are laid. Keep them in confinement three or four days; they will not suffer from it, and you will be able to see whether we are right in our surmise. Discontinue the Indian meal and the house scraps while they are in confinement; they are too fattening. Feed on oats put in a vessel 2 or 3 inches deep, the bottom of which should be covered with a sod of grass, and the vessel filled with water. We advise you to discontinue the Indian meal after they are again at liberty.

**GROUND OATS (A. B.).**—In our experience coarse oatmeal is of no use for poultry-feeding. It does not mix, and the fowls will not eat it. It has the appearance, when slaked, of meal and chaff mixed. We buy very good ground oats of Mr. Marsh, Market Place, Kingston-on-Thames.

**PULLETS' EGGS FOR HATCHING (A Subscriber).**—We should be dissatisfied with pullets' eggs, but there would be some difficulty in proving that they were so. The early eggs of a pullet we should object to, but the later ones often do well. We should in your case write to the person from whom we bought them, stating our belief respecting them. It would give you good grounds for complaining if you find you are right, and we have no doubt the seller would do you justice.

**BRAHMA CHICKENS SNEEZING (A. P.).**—Your chickens are suffering from chill and blackthorn winter. Are the hens still under their ribs, or are they at liberty? If the latter, we advise you to put them under ribs at once. The weather is neither settled nor warm enough to allow the hens to drag chickens about. Put your ribs in a sheltered place—under a rick is excellent; choose a spot completely open to the sun. Give them some bread and ale night and morning, and let their water be strongly impregnated with camphor. Where the gaping is constant give each patient a pill of camphor the size of a small pea. Give them some bread and milk once or twice per day.

**FEATHER-EATING FOWLS (A. B. Z.).**—We are sorry to say we cannot tell you of a cure for the abominable practice you complain of. Spanish are more prone to it than any others. Get them only at liberty. The want produces a craving which they cannot satisfy, and feathers seem to be the nearest approach to a substitute. We have sometimes lessened the habit by supplying the run with a barrowload of fresh earth mixed with grass if we can get it. We have also given fresh horse dung with advantage. Lettuces are very good, especially if they are run to seed. Nothing, however, has ever overcome the habit, and we should be delighted to know a cure. It begins about this time and lasts till after the mowing; they are then safe until the next spring. We have never known it when birds are at liberty.

**SEX OF SWAN (Ficar).**—The sex can only be ascertained by examination. Let your man hold the bird, hack downwards, with the head between his legs. In each hand he must hold the thigh and a wing. If, then, another squeeze about  $\frac{1}{4}$  inch below the vent, and press gently upwards, the sex will be plain.

**FOWLS DROPSICAL (Cross-bred).**—Dropsy is, as a rule, the result of stimulating food to cause laying, or of old age. The water is generally contained in two or more bladders. It is perfectly clear, and the skin of the bladders is as transparent as the water. The non-sitting breeds are more subject to it than the others. There is no cure.

**KEEPING EGGS (Idem).**—We know from experience only of the lime process for keeping eggs, but we have been told that if new-laid ones are at once covered with butter they will keep. We cannot help thinking that pullets' eggs laid without contact with a cock would keep a long time. If we live we intend to try it next year.

**POULTRY MANURE—CHARRED CORN (H. G.).**—The price of poultry manure must depend upon its abundance and the demand. In Sussex, where poultry are reared in large quantities, the price is 5s. for a one-horse cartload. Charred wheat is not prepared in this country, but it can be made in the same way that coffee is roasted.

**BRAHMAS' NESTS (L. N.).**—They should be on the ground, or at the lowest admissible height from it. If they must be 4 feet from the ground, having the perches midway would answer.

**PUTTING ON SUPERS (J. W. B.).**—Supers may be placed on your hives at any time; but the best time to do it is about eight days after all the combs in the hives have been covered with bees, say fourteen days before they would be ripe for swarming. It is important to induce the bees to enter and commence work in the supers as soon as they are placed on the hives. Instructions were lately given in our columns how to examine hives, and thus ascertain when supers should be used, and instructions will be given either in separate articles or in the bee-keeper's calendar how to drive and unite swarms. Doubtless your fifth hive is very weak, otherwise it would take the food you offer it, and begin to work. Turn it up and see what is the matter with it. It may be dead, and the few bees going in and out may be strangers or robbers, or it may be so weak in bees that it has not begun to breed. Probably your hives with the "pieces of tin" belong to a set of collateral boxes, and you will find a box with corresponding slides to match. Some years ago collateral hives were all the rage. They are now generally discarded for the super-hiving system, which is far superior. Nutt, following White, was the great patron of these hives.

**GLASS SUPERS (W. B.).**—Apply to any of the dealers in hives who advertise in our columns.

**DRIVING BEES—PRODUCE OF HONEY (N. Nadin).**—You ask first how bees are driven from hives three weeks after swarming? Secondly, what the probable difference in the amount of honey taken then and what is usually taken in August? and thirdly, how late this turning-out operation may be practised with safety to the bees—that is, giving them time enough to collect winter stores? The first question will be answered fully either in a special article or in the bee-keeper's calendar for next month. As to the comparative

difference in the amount of honey we cannot speak with accuracy, for much depends on the times of swarming and seasons for honey. By turning out the bees three weeks after swarming, in honey seasons, from 15 lbs. to 25 lbs. are obtained from each stock hive, and the bees so turned out into empty hives will weigh by the end of August from 50 lbs. to 70 lbs. per hive, yielding, when the honey is taken from them, from 20 lbs. to 30 lbs. First swarms generally give about 15 lbs. more. We are speaking of good seasons and large hives. Stocks that are not managed on the turning-out principle will rise in weight from 70 lbs. to upwards of 80 lbs., and yield 30 lbs. of honey. We continue to swarm our hives till the middle of June, and three weeks later turn all the bees out of them into empty hives if we can get 20s. worth of honey from each.

**BLACKBIRD NOT SINGING (H. F. Brereton).**—The reason your Blackbird does not sing, and breathes with difficulty, is that he has caught cold; and you should therefore keep him out of draughts, and feed him well by giving him some meal-worms, snails, and slugs in addition to his usual food. The longish pimple you found on his hump is really a natural gland, which secretes an oil that he uses when in good health while pruning his feathers, and you should by no means wound it by probing it with a needle, nor put butter on it. As soon as the bird recovers from his cold he will, no doubt, attend to his toilet as usual, when, if you watch him, you will see that he squeezes with his beak a little of the oil out of the gland and rubs it over his feathers.

#### METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barometer at 32° and Sea level.	Hygrometer.		Direction of Wind.	Temp. of Sun at 1 ft.	Shade temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.	Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.
April.										
We. 8	29.931	47.8	43.3	N.W.	47.6	58.8	43.2	112.8	41.7	—
Th. 9	29.731	45.9	45.0	S.	47.6	58.2	39.4	79.9	36.7	0.332
Fri. 10	29.369	45.7	44.2	N.W.	47.1	55.4	43.6	83.0	43.1	—
Sat. 11	29.224	44.8	41.9	S.E.	45.5	51.2	32.7	79.2	28.9	0.032
Sun. 12	29.475	48.2	44.1	N.E.	45.6	51.2	40.3	59.8	56.3	0.018
Mo. 13	29.417	46.0	42.3	S.	45.7	52.5	35.1	87.2	30.6	—
Tu. 14	29.475	46.3	44.7	N.E.	45.4	56.2	39.6	88.9	34.7	—
Means	29.547	46.3	43.8		46.5	54.1	39.2	84.4	36.1	0.037

#### REMARKS.

- 8th.—A very fine day, but the wind rather cold.  
9th.—Fine but windy morning; a cold comfortless day, and a very wet night.  
10th.—Rather a dull day; solar halo at 4 P.M.; a sharp shower and rainbow at 5.40 P.M., but fine night.  
11th.—Showers in the morning, but fine afternoon and evening.  
12th.—Fine in early morning, but frequent showers during the day.  
13th.—Wet and stormy morning; sun shown at times, but a stormy day. Heavy hail shower at 12 A.M.; fair evening.  
14th.—A moderately fine day, but the wind very stormy, particularly so at night.  
By no means a pleasant week: wind boisterous, sky cloudy, and temperature below instead of above that of the preceding one.—G. J. SIMONS.

#### COVENT GARDEN MARKET.—APRIL 15.

A MODERATE amount of business is current, but not to equal what has usually been the demand at this season for several years past, forced fruits, not being nearly so much in request. Strawberries continue to be largely supplied, and Grapes, asparagus for the trade; some samples of Black Hamburgs are very good. English Asparagus under glass is nearly over, the French coming more freely from Toulouse and other places in the south of France. New Potatoes from Malta 3d. to 4d. per lb.

#### FRUIT.

	s.	d.	s. d.		s.	d.	s. d.		
Apples.....	1	0	0	0	Mulberries.....	3	0	0	0
Apricots.....	doz.	0	0	0	Nectarines.....	doz.	0	0	0
Cherries.....	1 lb.	0	0	0	Oranges.....	100	4	0	16
Chestnuts.....	bushel	10	20	0	Peaches.....	doz.	0	0	0
Currants.....	1 sieve	0	0	0	Pears, kitchen.....	doz.	2	0	0
Black.....	do.	0	0	0	dessert.....	doz.	3	0	10
Figs.....	doz.	0	0	0	Pine Apples.....	lb.	6	0	0
Filberts.....	lb.	1	0	1	Plums.....	1 sieve	0	0	0
Cobs.....	lb.	1	0	1	Quinces.....	doz.	0	0	0
Gooseberries.....	quart	0	0	0	Raspberries.....	lb.	0	0	0
Grapes, house.....	lb.	2	0	20	Strawberries.....	100	9	0	16
Lemons.....	100	4	0	12	Walnuts.....	bushel	10	0	16
Melons.....	each	0	0	0	ditto.....	100	2	0	2

#### VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes..... doz.	8	0	0	Mnabrooms..... pottle	1	0	2
Asparagus..... 100	4	0	10	Mustard & Cress..... punnet	0	2	0
French..... 12	0	0	0	Onions..... bushel	4	0	7
Beans, Kidney..... 100	2	0	0	pickling..... quart	0	6	0
Beet, Red..... doz	1	0	8	Parsley per doz. bunches	4	0	6
Broccoli..... bundle	0	9	1	Parsnips..... doz.	0	9	1
Cabbage..... doz.	1	0	1	Peas..... quart	10	0	0
Capsicums..... 100	0	0	0	Potatoes..... bushel	3	6	4
Carrots..... bunch	0	8	0	Kidney..... do.	0	0	0
Cauliflower..... doz.	3	0	6	Round..... do.	0	0	0
Celery..... bundle	1	8	2	Radishes..... doz. bunches	1	0	1
Coleworts..... doz. bunches	2	8	4	Rhubarb..... bundle	0	9	1
Cucumbers..... each	1	0	2	Salsify..... bundle	1	6	0
pickling..... doz.	0	0	0	Savoy..... doz.	1	0	2
Endive..... doz.	2	0	0	Scorzoneria..... bundle	1	0	0
Fennel..... bunch	0	8	0	Sea-kale..... basket	1	0	2
Garlic..... lb.	0	6	0	Shallots..... lb.	0	3	0
Herbs..... doz.	0	3	0	Spinach..... bushel	2	0	0
Horseradish..... bundle	2	0	0	Tomatoes..... doz.	2	0	0
Leeks..... bunch	0	3	0	Turnips..... bunch	0	3	4
Lettuce..... doz.	1	0	4	Vegetable Marrows.....	0	0	0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 23—23, 1874.	Average Tempera- ture near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. e.	
23	TH	Meeting of Royal Society, 8.30 P.M.	59.2	56.8	48.0	21	49 44	7 47	59 9	27 2	)	1 46	113
24	F		58.8	56.0	47.4	17	47 4	9 7	14 11	55 2	8	1 57	114
25	S		59.6	57.2	48.4	17	45 4	10 7	after.	15 8	9	2 8	115
26	SUN	3 SUNDAY AFTER EASTER.	58.0	56.4	47.2	18	43 4	12 7	40 1	29 8	10	2 18	116
27	M	Meeting of Royal Geographical Society, [8.30 P.M.	59.8	55.7	47.5	18	41 4	14 7	50 2	42 8	11	2 28	117
28	TU		60.8	55.7	48.2	18	89 4	15 7	59 8	52 8	12	2 38	118
29	W	Anniversary Meeting of Zoological Society, [1 P.M.	60.5	57.5	49.0	15	37 4	17 7	8 5	3 4	13	2 46	119

From observations taken near London during forty-three years, the average day temperature of the week is 59.5°; and its night temperature 36.5°. The greatest heat was 82° on the 27th, 1855; and the lowest cold 18° on the 21st, 1851, and 23rd, 1861. The greatest fall of rain was 1.40 inch.

## DISBUDDING VINES, AND KINDRED HINTS.

**T**HE important process of disbudding has seldom full justice done it in papers and treatises on Vine-culture. By all experienced cultivators, however, it is adopted as one of the first and main points in their practice. But it is just this class that I am desirous of leaving out of mind altogether in penning this paper, a natural preference leading me, as it were instinctively, to think of amateurs and their many doubts and perplexities as to what to do at certain times to insure the coveted Grapes in the little structures that have grown on to their dwellings. These little glass houses have sprung and are springing up apace all over the country, and especially in the environs of towns and cities. Former attempts have been made to simplify Grape-production, and especially to dispel some popular, but erroneous, notions that in all cases expensive border-formation is an absolute necessity to produce useful Grapes. On this point I will only repeat, that in eight cases out of ten it is nothing of the kind.

I will now, for the present, leave the root of the question and look upwards, and see what can be done with branch and foliage by way of leading to the one great end and purpose—fruit. In looking into an amateur's vinery the practical gardener may occasionally see much to admire, and, further, may frequently pick up a hint which he may tack with advantage to his own practice, or store in his memory to use when occasion requires. It is only bare justice to make that concession; but, on the other hand, it is only simple truth to say that he also sees much to avoid. There are two things unusually common which a thorough gardener never likes to see in the management of Vines—one is a thin, spindly, contracted stem at the bottom of the rod and a few feet up a huge protuberance, and from this a thickening of the cane to the top. This, to my eye, looks as much out of place as a ladder reared against a wall thick end upwards, only of the two I would much prefer the ladder. Vines, it is true, when so grown have produced good fruit, but I am not sure if the exception is not so much a matter of rarity as to—rarity like—make a greater impression than would a crop from Vines more naturally and sensibly grown. And further, it is possible that those who have observed good Grapes on these spindle-shanked Vines may also have noticed that such Grapes were more prone to shank than those regular in thickness, or with the thickest portion of the stem nearest the ground. I think—no, I am certain—that I have seen shanking in connection with Vines which taper in thickness downwards more frequent than when the tapering was, as it ought to be, upwards.

But passing over shanking for the moment, I will state the other common error—viz., an overcrowding of stems, and consequently of foliage. Here, then, are two things to avoid—spindly stems and overcrowded leaves. One is the result of overmuch disbudding, and the other

of not sufficient. A Vine may have from 3 to 6 feet, sometimes considerably more, to grow before it reaches the point at which fruit is required—before, in fact, it reaches the roof the house. How common it is to denude this portion of the stem of all its buds at one general rubbing. This is disbudding with a vengeance, but it is all wrong. Then when it reaches the roof, a fine short-jointed young cane may have buds studded at 6 inches distant over its whole length, and these are left untouched. That is also wrong; it is the other extreme.

This is about the period of the year that Vines in unheated, or partly heated, houses will be fairly commencing to enter on their season's growth. The first point to attend to is that that growth should be equalised over the whole length of the Vine, having due regard to the complete furnishing of the roof, and, what is not a whit less important, particular care that there is no crowding and crushing of foliage, preventing a due and natural expansion, without which the life functions of the Vine cannot be properly carried out. The first means to this end is disbudding. It is pretty well understood that 2 feet 9 inches or 3 feet is the proper distance to carry up the rods. This, however, is only just half of the matter as to the due distribution of foliage. At this distance three or four eyes will push from a spur. It is not enough to say that two-thirds of these should be removed, but on hundreds of spurs on hundreds of Vines whole spurs should be entirely divested of their growth—that is, when they, the spurs, have been permitted to form too thickly on the stems. I have seen the most signal benefit accrue to Vines by nothing else than a more proper and thorough disbudding than had heretofore been practised. Example, and there is no scarcity of such: a roof covered with Vines, the spurs set on the rods as closely as 6 inches from each other, foliage small, wood small, and fruit small. Why, it must be so, simply because it cannot be otherwise. The strength of such Vines is wasted. The whole vitality is pumped out of them by a thicket of spray, each shoot battling with its neighbour for supremacy, fighting for light in order to perfect its foliage. It is a hopeless fight; such a perfecting there cannot be. The power of man is there too great for the force of Nature. In his vain attempts to aid it he has crippled it, and Nature in attempting to get out of the crowd only makes the crowd more dense. Were the growth from these spurs limited to half, and less than half the number of shoots, those left, as a direct consequence, would be stronger, better, and more perfect for the work they had to do. Spurs intended for fruit-bearing should never be left nearer than 1 foot from each other, and 15 inches will be better—that is, when the rods are about 3 feet apart. Not long ago I saw a large vinery a perfect thicket of wiry wood. By taking out more than half the spurs at the winter's pruning the Vines improved marvellously. What was done by cutting then may be done by rubbing now, and the superfluous spurs may be removed in winter. To amateurs who are not well conversant with the subject the shoots when thus thinned may look over-scantly placed, but look ahead for a moment, and contemplate the size of

the leaves, and they will settle into complacency that the disbudding must be right. Even Vines which have pushed several inches may be thinned by disbudding, but in this case if much has to be taken out let it be done a little at a time, and at intervals of a few days. It may make little or no difference to the crop this year, but future years will show the benefit of the practice. The shoots so left—left thinly—should be allowed to carry all the foliage possible, providing always that every leaf have room to expand without interfering with its neighbour. That is the real and true guide in the disposition of wood and foliage.

But to the spindle-shanked Vines. They ought not to be so, and they need not be so. When so formed they are difficult to cure, but nothing is more easy to prevent. Let them carry a little foliage down to the root, and no fear of the stem not thickening. A few years ago one of my amateur friends planted a vine. For the first 6 feet of the rods no Grapes were required. Instead, however, of rubbing away the buds I advised him to leave a few, and pinch them, keeping green foliage down to the root—at least for a few years. He had to run the gauntlet of a laugh at carrying foliage where it was not wanted, "robbing," as he was told, "the main part of the Vine." Robbing, indeed! It was feeding, and the Vines are now, as they ought to be, thicker at the base than at any other point. The passage for sap is full, ample, and free, and when, as they have been sometimes, permitted to carry fruit down to the ground, that at the bottom has been finer than on any other part of the Vines, and no Vines generally could be in better condition, untouched as they have been from the beginning by any but an amateur's hand. A proper and reasonable system of disbudding has been the main element in their prosperity, every leaf having had room to expand, and at the same time no light lost. Sunshine for every leaf, and always a leaf for sunshine—that is the point to aim at, and, other conditions being favourable, Grapes will follow as a matter of course.

I am induced to advert to this subject, fully believing that one of the greatest of all causes of indifferent Grapes is the overcrowding of foliage, a direct consequence of disbudding neglected, or improperly or insufficiently performed. Very frequently, also, too much wood is left at the winter pruning in little vineries attached to villa residences. The only correct mode of treatment in such cases is, at this season, disbudding. I was once called to prune a vine at the end of April, when the eyes all over the house had pushed 3 to 6 inches. Pruning was out of the question, and to leave the Vines as they were was certain ruin. By disbudding carefully and gradually, leaving only the base shoots, a really nice crop was secured, and after the following autumn pruning no one could tell that the Vines had ever been pushed out of the ordinary routine of orthodox management.

At this season of the year if anyone is troubled with Vine-bleeding to an alarming extent—and I have occasionally seen people at their wit's end in attempting to arrest the waste of sap—a specific generally as handy as most things, and as easily applied, is the "knotting" used by painters. I have seen it used in extreme cases, and have never yet known it fail. This is a hint I gathered from an amateur; so in the statement made at the beginning of my letter, that this class can at times give instruction to gardeners, I did not, to use a provincialism, "speak without the book."—J. WRIGHT.

### ROYAL HORTICULTURAL SOCIETY.

A SPECIAL general meeting of the Society was held in the Council-room, South Kensington, on Tuesday last, for the purpose of considering and, if thought desirable, adopting or confirming the following new bye-laws, which had been made by the Council of the Society at a meeting held by them on the 17th of March, 1874.

"1. The existing Bye-law of the Society numbered 63, and the Proxy Form D in the Appendix, are hereby revoked and repealed, and the following Bye-law and Proxy Form H, are substituted in place thereof:—

"Every Fellow of the Society entitled to vote may appoint by written proxy, in the form marked H, any properly qualified Fellow to vote for him or her, otherwise than by ballot, in his or her absence, at any general meeting of the Society.

"Every such appointment of Proxy must be delivered to, and left with, the Clerk or Secretary of the Society, at the office of the Society, at least forty-eight hours (Sundays not included), before any vote shall be given by virtue thereof."

Here follows Proxy Form H:—

"2. That, if the new Bye-law relative to Proxy-voting be adopted, the Bye-law No. 51 be altered by substituting the words 'two weeks,' for the words 'one week.'"

The chair was taken by Viscount Bury, the President of the

Society. The attendance was not large, but those present, amongst whom were some ladies, appeared to take the greatest interest in the proceedings.

The minutes of the general meeting of the Society held on the 8th of January last, when a pledge was given by the President that the Council would bring forward the bye-laws as above, having been read by the Secretary, Mr. W. A. Lindsay, and confirmed,

The PRESIDENT rose and said:—Ladies and gentlemen, I have very few words to address to you on this occasion. The Council has convened a special general meeting of the Society for the purpose of considering and, if thought desirable, adopting and confirming certain alterations in the bye-laws of which the meeting is already in possession. The circumstances under which the new bye-laws have been prepared by the Council will possibly be fresh in the recollection of all the Fellows of the Society. Certain Fellows of the Society—or, rather a numerous body of them, as we had reason to believe—thought it was desirable to extend the privilege of proxy-voting, which was enjoyed by the lady members of the Society, to the whole body of the Fellows. At the time of the last general meeting a resolution to that effect was moved as an amendment upon the proposal of the Council that their report should be adopted. That naturally amounted to a vote of want of confidence in the Council, although those gentlemen who promoted the amendment disclaimed any such intention; but, of course, if a Council puts forth for a Society a report and asks its adoption, and an amendment is made upon it, the question is whether it is intended or not to become a vote of want of confidence. For that reason the Council were entirely unable to concur in or adopt it; but at the same time they said they had no wish to stand between gentlemen who entertained such an opinion and the whole body of the Society, and that if these gentlemen wished to bring the matter before the consideration of the Society, the Council were willing to abide by any decision which the Society in general might adopt. But there is a peculiar clause in the Charter under which we exist, which provides that no bye-law shall be brought before the Society for its adoption unless it be drafted by the Council. The Council as a body entirely disapproved of what was proposed, but, having stated they did not wish to interpose their authority, but were anxious to have the matter discussed, they said they were willing to take the responsibility of drafting a bye-law, but would do so for the formal reason that it could not otherwise be submitted to the Society at all—that they did not wish to pin themselves to the principle of such a bye-law, and that they reserved to themselves the right of discussion. I will just read an extract from my speech, which was most accurately reported by the gentlemen who wrote for the horticultural papers. It is as follows:—"The Council will undertake—you will consider that this is a pledge on their part—having so drafted it, that they will not canvass against it, or ask for proxies against it, or do anything in opposition to it; but as individual members of the Society they will reserve to themselves the right to discuss the matter when it comes forward." Now, gentlemen, I need not say we have had this matter under our very anxious consideration. We bring a bye-law before you; we place it upon your table, and, as a body, we have now discharged the obligation we have incurred. The obligation now ceases, and we arrive at the time when we can discuss the question on its merits [hear, hear]. We are unanimously opposed to this principle—

Mr. W. A. LINDSAY (Secretary).—Not "unanimously;" there is one dissentient.

The PRESIDENT.—Well, the majority of the Council with one dissentient, although I was not aware there was one; but of course he will speak for himself. But as far as the Society is guided, or chooses to be guided, by the majority of its Council, the Council thinks this bye-law which they now submit for your adoption or rejection would be injurious to the Society were it adopted [cries of "hear"]. I wish carefully to guard that of which I have the honour to be the head, from any suspicion of unfairness in this matter. We have not canvassed against the proposition; we have not done anything in opposition to it. We have fulfilled our pledge; the bye-laws are on the table, and now we resume the position of stating our candid opinion about it [hear, hear]. It would be impossible for any Council—and this is my deliberate opinion, ladies and gentlemen—with any self-respect to continue the management of your affairs if any such system as that proposed were created [hear, hear]. In railway matters and those of other public societies, the Council or Board of Management may be called upon, as a matter of course, to send to the great body of shareholders on the eve of a general meeting, requesting that proxies may be returned in favour of the Board of Management. Now, supposing we adopted that course—and if proxy-voting were the rule we should have to adopt it—say that we have four thousand Fellows, the postage would come to something like £16 13s. [a laugh]. That would be a very heavy expense for the Council to place upon the Society. It is no question of confidence in your Council, which would be absolutely at the mercy of any single gentleman in the

room who had taken the pains to collect a few proxies against the Council in the course of the year [hear, hear]. If we did that we should simply place an expenditure of £16 13s. on the shoulders of the Society at every general meeting, and I am sure no body of men like ourselves would think that a very wise proceeding. But there is another and wider objection to it, and it is this:—There is no sort of guarantee on the part of persons getting proxies that they will be used for the purpose intended [hear, hear]. What happened on the last occasion? Ladies have the power of voting by proxy, and Lord Alfred Churchill and others exercised what was certainly their undoubted right, in sending out circulars requesting they might be furnished with proxies to vote with, in order to save the Society from financial ruin. In what way were the proxies used? They were used to throw the Society into Chancery [cheers]. Suppose any of those ladies had been informed that their proxies would be used for the purpose of throwing the Society into Chancery, do you think one out of every ten of these proxies would have been given? [hear, hear]. And that is so strong an objection that, if there were no other, it ought to persuade you to reject the proposition. But there is another objection—not certainly of very great importance—and that is, that this Society is managed by gentlemen who have other and very large calls upon their time, and who, at the sacrifice of other engagements, devote their time to your service [hear, hear]. If, in addition, you make them fight for their lives at any time there is to be a general meeting, can you get a body of gentlemen at this side of your table of sufficient standing and position to incur the inevitably distasteful work in connection with the Society? I for one should decline to act on these conditions, and I think I speak the feelings of my friends on both sides of the Council Board if I say that, in addition to the embarrassments which may arise, you would have the minor embarrassment of electing a new Council should you adopt the proposition before you. I put it to you to show you how strong our own feelings have been on this matter, and how strongly we felt that if this bye-law passed it would be prejudicial to the best interests of our Society. I will not detain you longer, but simply read the bye-law the Council, in accordance with their pledge, now submit to you. [The Chairman here read the bye-law as above.] Having now performed the duty for which the Council were called together, and having spoken as I did at the last general meeting, I leave the matter in your hands, taking the opportunity of saying we do not recommend, with one dissentient, the bye-law placed before you [applause].

Mr. LEONARD strongly objected to changing the Charter of the Society by giving votes by proxy, which was directly contrary to the authority of the Charter. He put it to the meeting and to the Council whether they were prepared to alter a Charter which had been deliberately entered into? Were they going to do that at the instance of a mere party consisting of 100 or 120? [hear, hear]. Were they, or were they not, prepared to alter the Charter to gratify this small section of gentlemen? They had distinct evidence that the Fellows were perfectly satisfied, as shown by their disregard of the shameful circulars which had been issued and circulated [hear, hear]. He trusted that his lordship in the chair, and the gentlemen of the Council beside him, would use their utmost influence to prevent the Charter being altered by approving of voting by proxy.

Mr. BATEMAN.—Will this matter be put to the meeting without a motion? Perhaps the noble lord will inform me.

The PRESIDENT.—The Council have no right to make any proposition in the case, and unless the bye-law is proposed it falls to the ground.

Mr. BATEMAN said he should therefore move that the bye-law be accepted by the meeting. He had listened with very great attention to what had fallen from the noble lord in the chair, and had read what had been written by those not-always-honey-mouthed newspapers, and, notwithstanding a good deal said by both respecting voting by proxy, he thought its advantages predominated. He asked whether it was likely that by giving votes by proxy to the country Fellows they would strengthen the hands of those to the interests of the Society? He knew that he, whether on the Council or off it, was always opposed to concessions being made to the Royal Commissioners. It seemed to be taken for granted on a former occasion, because it was thought he was travelling in the same direction, he had the same motive for his movement. It was just as likely as that because two persons were seen going into Charing Cross station that both were bound for Paris, instead of one being bound for Dover and the other for London Bridge [a laugh]. He thought that voting by proxy would strengthen the hands of the Council and raise the Society in the estimation of the country [hear, hear]. At the present time there must be naturally some uneasiness amongst their country friends. They were left out in the cold—they did not know what was going on—and yet their friends in the country were those who really cultivated horticulture. He regretted that the noble lord, after stating that the Council did not make this a cabinet question [a laugh], said still if the bye-law was carried they would resign. Now this was not quite

parliamentary. He should very much regret if the Council threw up their portfolios [a laugh]. They had done the Society good service [hear, hear], and might do it good service still, but he should be sorry if the Council, after bringing this matter on, were to throw the weight of their influence in the contrary scale, or, if the proposition were carried, they should refuse to act under it [hear, hear]. He begged to move the adoption of the bye-law submitted by the Council.

The PRESIDENT.—I beg to say I had no sort of authority to state the Council would resign, nor do I pretend to have, and I beg to withdraw that observation altogether [hear]. I intended to say I thought the position of the Council would be entirely untenable, and that you should have to provide yourselves with our successors. That is my private opinion. I am sorry the observation escaped me, because nothing in the shape of a threat should come from the Chairman. Has Mr. Bateman's motion been seconded?

Mr. CHARLES WILSON begged to second the proposition, and did so because he thought the new bye-law would bring the Society a large addition of country Fellows.

Mr. W. A. LINDSAY said he wished, with a view to preventing misconception as to what he said when the Chairman was speaking, to make one or two observations. The reason he could not endorse the remarks which the Chairman made on behalf of the Council was that he did not feel the same strong objection to the system of vote by proxy which all the other members of the Council did [hear, hear]. He was not prepared to say affairs would be unworkable under that system any more than they were at the present time. Further than that he could not go. He could not approve of the system of proxy-voting, and he supposed the Council felt themselves unable to go further than that, and so the Chairman made use of the word "unanimously." The full object with which he retained his post as Secretary was the hope that under the administration of the present Council, and with the little assistance he could give, the Royal Horticultural Society might become what it never had been—a Society for the promotion of horticulture [hear, hear]. He did not think that voting by proxy would be other than an anomaly in a purely scientific society [hear, hear]; but, inasmuch as he could not go the length of condemning it in the strong terms other members did, he was unable to allow the use of the word "unanimously." He did not, certainly, want to let the meeting know there was a single member of the Council who approved of voting by proxy.

Dr. DENNY rose to move an amendment. He thought voting by proxy would be worse than useless in a horticultural society—at any rate in that Society. In the first place it would place power too much in the hands of one body, so that independent members could not carry out any object they desired, and the Council would have it in their power to act contrary to their wishes. The Council could canvass for proxies to any extent they thought fit—in fact, vote by proxy would place the entire power in the hands of the Council [hear, hear, and no]. At the present time there might be in opposition an organised body which might vote with the Council—that was as horticulturists; but they did not want the Council to govern them completely, nor did they want the Council to be governed by H.M.'s Commissioners [hear, hear]. He did not believe in country Fellows caring so much about vote by proxy as his friend Mr. Wilson thought. If their country friends made so much about the Society, or thought so much about it, they could take the rail and come up there to record their votes [hear, and a laugh]. Vote by proxy as it now stood, even, was most objectionable [cries of "hear"]. Proxies had been brought to that table and people at the bottom of the room did not know what way the votes were going to be given. If Mr. Bateman's argument was worth anything the specific matter voted upon ought to be printed on the back of the proxy paper. A whole meeting might be in favour of some particular proposition, and when the whole of the proxies were laid on the table no one would know for what the proxy-voters voted. He thought the proxy vote as it stood was a mistake. He thought it was casting a slur upon the lady Fellows to have the proxy vote when they came to that room to vote [hear, hear]. Ladies were on School Boards, ought to be able to vote for members of Parliament, and indeed he hoped yet to see them in the Cabinet [laughter]. Why could not ladies come there and give the Society the benefit of their opinion? [hear, hear.] He was sure if the ladies who had given their proxies some time since had come there, they would have had better sense than to vote for putting that Society, which was already so much in debt, into a lawsuit [hear, hear]. He thought they had better not give the ladies proxies any longer, but ask them to come there and give their votes themselves. He should therefore move "That the proposed bye-law of the Council should end at the word 'repealed,' and if his amendment were carried it would have the effect of abolishing proxy-voting altogether. Proxies were all very well for companies where large sums of money were at stake, where people could vote on a specific matter one way or the other. He therefore begged to move that proxies be altogether abolished [hear, hear]."

Mr. LIGGINS said he rose with great satisfaction to second the proposition. He did so with confidence after the remarks of Mr. Bateman, which were edifying, no doubt, but did not convey to their minds any reason why this proposition should be adopted. These applications for vote by proxy did not come from the country Fellows at all [hear, hear]. They had been silent in the matter. The applications came from Fellows resident in the neighbourhood of the gardens. Some of them had been on the Council, and had been giving valuable services to the Society, and none more so than Mr. Bateman [hear, hear]. It was a remarkable fact that during the many years Mr. Bateman was a member of the Council he never asked that the privilege of vote by proxy should be conceded [hear and laughter]. It appeared to him to be thoroughly out of place to have such a vote for a Society like theirs, and for no greater reason than this, that the ladies' proxies were used on the last occasion for a purpose totally different to that for which the ladies intended they should be used [hear, hear]. He was sure no lady would give her proxy for entangling the Society in the meshes of the Court of Chancery. The Society required peace and rest. No doubt it was in some financial difficulty, but not one of an insurmountable character. If that difficulty was to be overcome, it must be by giving support to those gentlemen who had undertaken the duties of the Council Board [hear, hear]. The Fellows must give those gentlemen every possible support; and when they were told that the Council were pretty unanimous in their opposition to this proposition, it was the duty of the Fellows to give them all the support they could. He sincerely hoped the meeting would put aside all that had been said about the past, and at once proceed to pass the amendment.

Mr. SHIRLEY HIBBERD said if they did not carry the amendment they would violate the fundamental principle of their Charter. The fact was, they had a right to vote by ballot; that mode of voting was becoming more and more in favour, even amongst the scientific bodies. The object of the ballot was to destroy any voting personal element. There remained after the ballot was taken no record of the way in which any man had voted. When they had the ballot, why should they substitute vote by proxy, the very first principle of which was to put the voter in the first place, publish him, and leave a record as to how he voted?

Mr. FISH wished to say a few words in reply to the noble Chairman. The Chairman had stated three objections to proxy-voting, one being as to the expense of postage; but he wondered it had not occurred to the Chairman, that if there were four thousand Fellows in the Society, surely if one thousand had to be written to by halfpenny postcards the tax would not be so heavy [a laugh]. The next objection was that proxies would not be used for the purposes for which they were given. Now, he thought it would be very easy for members to guard against such an occurrence, as anyone who went through the bye-law could see [no]. As to the misappropriation of proxies at the late meeting, he thought the noble lord had done a little injustice who took up proxy-voting papers on that occasion. What they were advocating was, not a Chancery suit but a friendly advice in order to avoid a Chancery suit [hear, hear, and no]. They would have been very wise had they adopted that. He must also say a word as to the Council. He thought there ought to be a strong Council, and once a Council was in office he felt bound to support them in every way. He believed the last Council was weak, and that therefore it died. The matter before them did not touch the Commissioners at all. Some of their editors made a terrible thing out of these Royal Commissioners, with their mouths wide open ready to swallow horticulture [laughter]. He had no fear of that. He believed in the services the Royal Horticultural Society had done for the advancement of the science, and that if the Commissioners wished to swallow horticulture they could not do it [hear and laughter]. Proxy-voting, he thought, would be a great boon to the country Fellows, and it would bring a great many guinea members into the Society. He did not believe there had always been parties and sections in the Society. He thanked the Council very much for having called that meeting, but he felt they were bound to call it by the terms of the Charter. They wanted by proxy-voting to get an unbiassed expression of opinion from the majority of the Fellows. For himself, he asked for proxy-voting to prevent him having the necessity of running up to London every day of meeting to vote. He must protest against accusations being made against highly respectable men.

The PRESIDENT.—I rise on a point of order respecting one observation by Mr. Fish. We shall be always glad to see him in a position to vote on this or any other occasion, but at the present moment he is not in a position to vote according to the bye-law [laughter]. I take this opportunity of saying so much, because there may be other honorary members here who think they have a right to exercise the vote, but unfortunately they are prevented doing so under bye-law No. 31.

Mr. FISH.—I am a forty-guinea life member [great laughter].

The PRESIDENT.—It is perfectly true you are a life member, but you are an honorary life member [renewed laughter].

Mr. FISH.—I voted before.

The PRESIDENT.—It is not by way of reproach this is said, but because other honorary members might wish to vote. We should like to see them vote, as they can become Fellows if they like.

Mr. FISH.—I was presented with a forty-guinea life-membership for my services in connection with the first provincial show. Sir A. GORDON (quoting from a book) said Messrs. Fish and Clay were made honorary members on the 6th of November, 1869, for services in connection with a provincial show, but there was no authority in the Charter for doing so.

Mr. G. E. FRERE said this episode showed them some of the advantages of the proxy system. If Mr. Fish had sent his proxy it would have been examined, and his vote would not have been taken. Now he told the meeting that he had already voted. He would remind his lordship in the chair that if halfpenny postcards were sent to all the Fellows the cost would be only £8 6s. 8d.

The PRESIDENT said he should now put the amendment, which was that all the words after the word "repealed" should be omitted. The bye-law would then read—"The existing bye-law of the Society No. 63, and the proxy form D in the appendix, are hereby revoked and repealed."

The amendment having been put, there were—

For the amendment .....	48
Against it .....	18

Majority in favour of it..... 30

The PRESIDENT then put *pro forma* the original resolution as a substantive motion. There were forty-nine for it, but its opponents did not express their dissent.

The meeting then broke up.

[Where were the country Fellows on Tuesday last, who have been represented as sighing so long and so deeply for the power to vote by proxy? Not only were they conspicuous by their absence, but the Fellows generally regarded the boon which some beneficent gentlemen proposed to give them with so much indifference that no more than eighteen attended to pass the bye-law granting so great a privilege.]

We have from the first regarded this movement in favour of giving the Fellows power to vote by proxy as not only uncalled for, but positively mischievous. It was had enough in the hands of the lady Fellows, but to extend it to the whole body it would have been productive of constant irritation and great abuse. It would give the power to every little clique to keep the Society in constant agitation, and the Fellows have shown by their indifference to the proceedings of last Tuesday how little they care for it, and how much better they prefer to be left alone and to be allowed to prosecute their gardening without molestation and turmoil.

The great argument which has been used to further this object, which some ingenious individual has endeavoured to promote, is, that the country Fellows want to have a voice in the management of the Society's affairs; that nothing is done for them; that if proxy-voting were granted there would be a wonderful accession of numbers, and that a millennial period will have begun in favour of the Society. But, unfortunately, we have no evidence of this; the country Fellows have never asked for this power, nor do they want any person to pat them on the back and make martyrs of them. They are not quite such feeble folk as they are represented to be, and when there has been any real danger to the Society, we have generally found them patriotic enough to be in their places when their presence was of service.

The meeting resulted just as we anticipated and as we desired. A large majority rejected the bye-law, and not only was the power for the Fellows generally to vote by proxy refused, but that privilege which the lady Fellows have hitherto enjoyed was very properly withdrawn. Proxy-voting is, therefore, abolished in the Royal Horticultural Society, which is now in this respect in the same position as all other chartered societies and learned bodies in which no such power has ever existed.—EDS.]

## AGERATUM IMPERIAL BLUE TOM THUMB.

I wish to consult the experience of other gardeners as to the Imperial Blue Tom Thumb Ageratum. Its very low growth made it appear a most valuable addition to the carpet patterns, and the year before last it looked very hopeful with me. Last year I used many thousands, and although it was much admired it did not satisfy me, as the leaves turned black, and the flowers

never came out so fully as they did in 1872. I attributed this partly to the cold summer and partly to a frost in June, just after they were bedded-out. I have been propagating all spring with the view of using it largely again, but find that not only the old plants from which I was taking the cuttings, but a great many of the young ones have gone off, showing the same withering of some of the leaves. I find that it is attacked by a rust which envelops the leafstalks and makes the plant flag and die, just like the Potato disease. Although I have a large stock of healthy-looking cuttings, I very much doubt whether it is wise to depend on them, and am propagating the Imperial Blue Perfection, which grows taller, but has not yet shown this disease. Have others met with the same disappointment?—CHARLES W. HAMILTON, Co. Meath, Ireland.

### CEPHALOTUS FOLLICULARIS.

This very rare plant is thus noticed by Sir W. Hooker:—For our first knowledge of this rare and highly curious plant, having the ascidia or appendages of the famous Nepenthes, but belonging to the natural order Rosaceæ, we are indebted to M. Labillardière, who discovered it in "Lewin's Land," and figured and described it in his "Specimen of the Plants of New Holland." Mr. Brown during his voyage with Capt. Flinders detected it on nearly the same line of coast—namely, "in the neighbourhood of King George's Sound, especially near the shores of Princess Royal Harbour, in 35° S. lat. and 118° E. long., beginning to flower about the end of December." From specimens there gathered the species has been illustrated by that profound botanist, so as, aided by the pencil of Mr. Bauer, to leave nothing to be wished relative to its structure, save what might be obtained from a knowledge of the seed, which is still a desideratum.

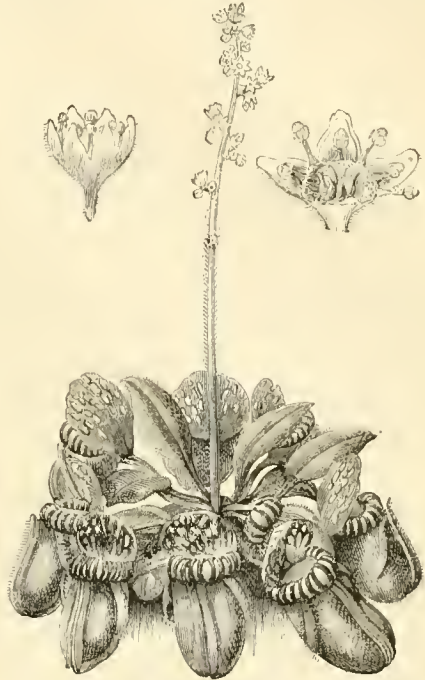
Capt. King brought over living plants of *Cephalotus* to the Royal Gardens of Kew in 1823, which flowered in August, 1827.

The root is perennial, somewhat fusiform, the upper part dividing, as it were, into two or three short stems, which bear a cluster of elliptical, lanceolate, petiolated, entire, thickish, nerveless, purplish leaves; and amongst these, but principally occupying the circumference, are several beautiful and highly curious pitcher-shaped appendages or operculated ascidia, attached by rather stout petioles where the lid unites with the margin of the ascidium. Their form is ovate or somewhat slipper-shaped, between foliaceous and membranaceous, green tinged with purple, furnished with two lateral oblique wings and one central one, the latter remarkably dilated at the margin, and all beautifully fringed with hairs. The inside, which contains a watery fluid and entraps many insects, especially ants, is clouded with dark purple. The mouth is contracted, horseshoe-shaped, annulated and crested with several deep, sharp, vertical annuli, of a dark purple colour, smallest near the base of the lid; three of them, which are opposite the wings, larger than the adjoining ones; all of them forming a sickle-shaped point within the mouth. Lid plano-convex, green without and a little hairy, within clouded with purple, marked with broad veins which are somewhat dichotomous, the margin scalloped;—at first it closes the mouth of the ascidium, and afterwards becomes nearly erect. Scape 1 to nearly 2 feet high, erect, terete, downy, bearing a compound spicate raceme of white flowers at the extremity.

It was cultivated by Mr. Corbett, gardener to the late Sir William Molesworth, at Pencarrow, in Cornwall, who thus describes his adventures with it to the Royal Horticultural Society.

"We have a large rockwork at this place; it faces the pleasure grounds. There is a large recess in this rockwork, where we have a flight of steps winding from the bottom to the top; about half way up these steps a bog or swamp was made, and in this bog we grow our *Cephalotus*. It is sheltered from the north, east, and south by granite rocks weighing from half a hundredweight to several tons. There are shrubs and different trees growing on and about the rock, which help in summer to shade part of the sun's rays from it. The bog extends nearly on a level; the shape of it is rather irregular; its average diameter is about 9 feet. Above the rock, and some distance from it eastward, there is a reservoir, from which the fountain in the centre of the flower garden is supplied by a large leaden pipe. As the place where we can turn the water off or on to the fountain is contiguous to the bog, where there is a small pipe attached to the large one, there we have another stoppage to the small pipe; it extends partly round the bog. There are small perforated holes all round it as far as it goes: from this

we can turn on little or much water to the bog, just as we think it requisite. At the commencement of making this bog there was rather a low place across the bottom, and as the underground was very porous, I put a layer of wet clay all over it; the next covering was a mixture of turfy peat, and a little very much decayed leaf mould; and on the top of that was a layer of sphagnum, with some of its decayed roots, and some of its natural soil that was under the roots. The surface of this composition was not all kept equally wet.



*Cephalotus follicularis.*

"The first thing that I planted in this bog was *Sarracenia purpurea*, which was about four years ago. It was a very small plant at that time, but it has grown very much, and is still doing very well, and it had nine flowers on it at one time last summer. I put a hand-glass over it to protect it in winter. Occasionally we put other materials over it to keep out the frost. The spring following I planted the *Cephalotus* under the same hand-glass, and there it remained doing very well, and treated in the same manner as the *Sarracenia*, until last April, when, to my surprise and regret, our poor little *Cephalotus* was rooted-out of the mossy ground by some mouse or large snail, and was to all appearance dead. The roots were all dried-up, but I fancied there was a little life in the stem; I brought it into my cottage, and laid it on some damp sphagnum. I then went up into one of the woods and found a rotten stump of an old tree; I cut off from it what I thought suited my purpose. There were some chasms in it, and it had living moss growing in it, and some perfectly rotten wood. I next put into one of these holes a little fine and sandy peat, a few knobs of rotten wood, and some very much decayed leaf mould, and also a little sphagnum. I then planted my poor, withered, little plant in this mixed holeful of living and decayed matter, and I sunk this old stump in the middle of the bog up to nearly the level of the rim of this hole, where the percolating water gently moved past, and pressed probably in a small degree through the lower fittings of the hole. I afterwards put a small bell-glass over the little plant; but the edge of the hole being rather uneven, the glass was not airtight. Over this I put a square iron hand-glass: it being in two parts, the air got in a little between the top and bottom; and in the middle of hot sunny days I have this partly shaded with a piece of old mat. In this situation no mice or snails are likely to be enabled to invade it.

"In about a fortnight after, I was delighted to find my little favourite returning again to the evidence of vitality, and now I never saw it in such a vigorous growing state. At first it threw-up healthy plain leaves, and soon after it had eight or

ten of them. It has now brought into sight about six or eight of its beautiful pitchers; some of them are three-parts grown, and some are less. It has divided itself into two stems. In summer I generally take off the bell-glass altogether, except when the night air is rather cold; and in very fine weather I turned the top of the hand-glass, so that through the angles the air had full access to the plant.

"In this bog all last winter were also the following plants:—

<i>Dionaea muscipula</i>	<i>Parnassia caroliniana</i>	<i>Lycopodium candatum</i>
<i>Sarracenia flava</i>	<i>palustris</i>	<i>Induvianum</i>
<i>Drummondii</i>	<i>Lycopodium circinalum</i>	<i>denticulatum</i>
<i>adunca</i>	<i>helveticum</i>	<i>Selago, &amp;c."</i>

## GRAPE VINE CULTURE FOR SMALL GARDENS.

No. 3.

It has been shown that the first year of a Vine's existence in its permanent quarters should be devoted to its establishment therein, to effect which a rude, robust, even wild growth is encouraged. In the second year pruning and training are applied to it, its energies are concentrated, and its entire economy is turned to the formation of a stout fruiting cane. This is done by reducing the whole of the first season's growth to a single stem, which is also shortened to within a foot or two of the bottom of the trellis. When growth again begins, the single stem or rod is only suffered to grow to the required length, the tip being then pinched-off; this induces lateral growth or side shoots, at the base of which upon the rod itself the buds are formed for the production of the first crop of fruit in the ensuing season. All the side growth is kept pinched-off at the first or second joint; and as sub-laterals are constantly pushing forth throughout the season of growth, constant attention must be given to this pinching, in order to restrain all tendency to wildness, and to admit abundance of light and air to the leaves of the fruit buds. Let this be clearly understood. At the base of each leaf is a bud containing the germ of another season's growth, and the vigour and production of that growth will depend very much upon how it has been nourished by the sap which was elaborated in its own particular leaf. It is, therefore, obvious that the leaves of the buds upon which our hopes depend for the production of a future crop of fruit are worthy of particular care, and all growth tending to crowd or much shade them should promptly be removed. I should like to add more concerning the philosophy of this important part of Vine culture, were it not that I am anxious to confine these papers to a brief yet clear explanation of ordinary details.

At the end of this, the second season, if all has gone well, each Vine will have developed one good fruiting cane, firm in texture, of a brown ripened appearance, and with its sides bristling with plump buds as large as a common hazel nut. The only pruning then necessary consists in the removal of the lateral growth, and as this is done the canes are taken down and tied together along the bottom of the trellis, where they remain till the buds start into growth. The smooth bark will require no dressing of any kind, only see that the vinery itself is as clean in every part as soap and water can make it, and that the soil about the roots in the interior border is sufficiently moist. The season's work is then completed.

With the third or fruiting year comes the time of trial, the quality and finish of the fruit being very justly considered the best test of the degree of skilful culture which has been applied to its production. In starting the Vines maintain a low but steady temperature, never exceeding 45° by night for the first fortnight, and never much below it; then, by gradually advancing with the growth, a temperature of 55° will be reached by about the end of the first month, and so onwards till by the time the Vines are in flower a maximum of 70° will prevail, and be steadily continued till the crop is fully ripe. The most critical time with regard to temperature is during the period of flowering, more especially if the weather proves wet, dull, and cold; it is then very advisable to daily examine the condition of the bunches, and if but little pollen is perceptible, to raise the heat 4° or 5° in order to promote a free, quick circulation of the air among them. This statement of degrees or scale of progress is applicable to the work whether early forcing is practised or not. In the latter case, by watchfulness and care solar heat may be so economised that but little fire heat will be necessary. With a free circulation of air 100° of solar heat will do no harm, but great extremes of heat derived from an artificial source are as hurtful as they are wasteful, and it is far better to regard the heat-

ing apparatus of a small vinery as a safeguard against the extreme fluctuations of temperature that occur in an ungenial season than as the principal source of heat.

The effect of moisture upon the actual growth of a Vine or in the development of its fruit, is very important, and is, I think, far from being clearly understood either in its application to the roots or branches. Given a well-made, well-drained border which, while it is firm even to hardness, is yet so porous that superfluous moisture will never remain in it, it is hardly possible to overwater the Vines, especially when the fruit is swelling. In a dry season I have very successfully given the borders a thorough soaking of water slightly diluted with clarified liquid manure twice a-week, and to show how thoroughly this is done, I may add that the sole rule for the guidance of the men is to pour on the liquid till a full strong flow is seen to issue from the main drain. The narrow interior border shown in the diagram at page 215 affords the greatest facility for this operation. The space from the surface of the soil to the top of the walls being flooded, and the water passing downwards under the arches to the outer border, it is distributed to the whole of the roots with the greatest expedition and certainty, and without any of the vexatious waste of time and water that is usually experienced when the water is poured upon a sloping surface. By converting the water into a mild form of manure all risk is avoided of reducing the border to a poor, inert, washed-out mass of earth, and it undoubtedly acts as a healthy, wholesome stimulant to the Vines. The canes are freely syringed till the foliage expands, but not so much afterwards, the vapour rising from the damp floor, border, walls, and evaporating-trays being usually sufficient to promote health and keep down insects. Excessive moisture must be avoided on dull days, but in bright sunny weather there cannot be too much with a free circulation of air. It has been justly said that the Vines which are constantly subjected to an extremely warm moisture-laden atmosphere produce foliage of a thin flimsy texture, and to this I venture to add a somewhat trite though very forcible axiom, "Avoid extremes" in Vine culture as in all other things.—EDWARD LUCKHURST.

## AURICULAS.

I MIGHT have written oftener about my old favourite the Auricula, but that I feared from its exceeding great scarcity it could hardly form a subject of anything like wide interest. However, there is evidence more and more that many have a deep admiration for this spring flower who do not grow it, and not a few are taking it up according as it slowly becomes accessible. Here the iron rule bends and breaks, that "demand creates supply." It cannot always. The Auricula, along with many another worthy flower both of the botanist and the florist, has been cruelly neglected, and few plants can more signally reprove neglect than this. There is no working it round to speedy abundance to meet a mere whim of fashion. But though I hope the Auricula will come to be well known and appreciated, I trust it will never become "fashionable." I am always very sorry for a fashionable flower. It does not, as such, win one's heart. It is like a passing face in a gay crowd. It is there to make an effect and a sensation, nothing more. I know the favour it basks in is a fickle thing. I feel it is subject to that mysterious principle on which all fashions change—to the action of that law of taste and fancy which, *c.g.*, has "worked-off" the majestic bonnet as Mrs. Gamp knew it, and brought about that light and elegant fantasy which now, like a floresent calyx, holds the corolla of a pretty face. The Auricula, like other florists' flowers grown for the intrinsic charms and beauties of each blossom and each petal, has hitherto existed and probably ever will exist only with a few, those to whom the bloom of a plant, although much and the chief reward, is not all the interest it has for them, who can enjoy growing it the year round, and with whom the garden is subservient to the plants, and not the plants a mere adornment for a plot of ground that has to be made gay with some sort of flowers in a conventional way.

I am glad of the present opportunity to inform those who are interested in the Auricula that what may be expected to be a very good show of them will be held in conjunction with the next show of the Manchester Botanical Society, to be held in the Town Hall, King Street, on Tuesday, April 28th. The hearty thanks of florists are due to the Botanical Council, who not only have shown favour to the Auricula, whose early English home was Lancashire, but who have also promised to support

and encourage the exhibition and culture of those other florists' flowers, such as the Carnation and Picotee, that deserve more general notice and wider cultivation. If only the graceful example of Manchester were followed by many other provincial botanical societies, then the exquisite flowers, popularly conceived to be only the forced and narrow craze and hobby of a few florist enthusiasts, would be brought forward and afford a new pleasure to very many.

Auriculas will be shown in Manchester in stands of six and four dissimilar varieties, in pairs, and in classes for single plants. If the stands seem small it is for the sake of keen competition in high quality. Even large growers feel the pull there is in presenting a stand of six faultless trusses, and it is poor sport to have to make up for a stand so large that you feel conscious of having to put in flowers below first-rate mark. There are quite enough of these left blooming at home, there should be nothing but the cleverest work upon the exhibition tables. So of trusses. We are supposed to thin them severely in the north; but although my plants are strong, and last in fine health, and live long, I seldom find that more than seven pips upon one truss can be trusted to be up to the mark in character and size. Nothing looks worse than a large number of uneven pips—in fact, nine free and uniform are a better sight than nineteen crowded and top-heavy. Moreover, I have noticed that the edged classes often throw too much body colour into central pips, while in all a number of the middle ones will be of uneven size if left in.

I hope to give our readers a short report of the Auriculas at the Manchester Show. Would that efforts like this might lead more lovers of floriculture to take up a florist's flower! The culture is a pleasure distinct from aught else in the garden. In the hothouse and the conservatory, in the bright beds upon the lawn, and the ribbons by the walks are, indeed, the gay outer society of flowers which one admires in the mass and acknowledges as distant acquaintance. But florists' flowers, for which we do everything ourselves, and know the whole nature of, which we cherish in health and nurse in their sickness, which are of equal interest whether in bloom or in leaf only, or even at rest altogether—these, I say, are our dear familiar friends, these the circle of our intimacy. We would rather stand over one bloom of these than be presented with a handful from the dressy beds. So, at the risk of being thought wildly enthusiastic, and of seeming to ride my hobby-horse at John-Gilpin speed, I will say, in conclusion, that if the reader has not some favourite flower in his heart and garden (and a florist's flower grows to be the greatest favourite) he seems to me almost as one who has never known—amid and above all life's many friendships—one love.—F. D. HORNER, *Kirkby Malzeard, Ripon.*

### HEATING BY HOT WATER.

HAVING perused at page 269 what Mr. Robson offers as a "review of some of the changes in public opinion" on the above subject, I confess my inability to discover that he has done more than given the results of his individual experience as a gardener in connection with hot-water heating, which commenced, as he states, in the year 1829, or about forty-five years ago. In doing this he has allowed his historical account to centre upon the old and worn-out contention between saddle and tubular boilers, to which is added that in his opinion the saddle, "either in the old or in some improved form" (thus admitting that the old saddle needs improvement), "is after all the most useful, and consequently the most popular boiler." The fact is that, like hundreds besides, he lacks the requisite data for instituting a scientific comparison of the merits of these boilers; and never having worked out the problem, he has no reliable basis for the opinion he expresses.

Perhaps, however, Mr. Robson will kindly excuse me if for a moment I diverge from the confined limits of the garden and turn to the more open field of engineering, where greater scope is found for the adequate discussion of this very question of heating. And first let me inquire how it is that Mr. Robson fails to discover that any real progress has been made in the science of heating during the last half-century. To my mind the answer is given in his own letter, from which it is clear that his judgment is based upon the experience gained by working the apparatus in his own hothouses—rather a limited school of instruction for the purpose, I apprehend.

Passing allusion is made by him to the open-pipe system; but how much valuable knowledge could be developed in a deep and thorough review of the various changes the numerous

systems have undergone! Our friend is entirely silent upon the introduction of the out-of-level system; and taking them somewhat in their order I wish we had had a few remarks from him upon the open-tank system, the close-pipe system, the high-pressure system, the continuous-pipe system, the circulatory-chamber system, the dip system, the one-pipe system, and the various systems employed for warming domestic and public buildings, all of which have an existence and a history, and constitute in their aggregate an interesting and important subject that deserves to be carefully examined and described. Thus much for the "no-progress" portion of his letter. But the boiler is the great centre around which all this question lies; and here I must beg leave to say a few words.

Before accepting Mr. Robson's dictum as to the superiority of the saddle boiler I should like to know by what tests he arrived at his conclusion, because it is quite opposed in principle to those formed by our most scientific authorities. I have no desire to discuss the question "Whose is the best boiler?" as that would be quite out of place in a communication of this nature; and my only object in now addressing you is to caution your numerous readers against forming an opinion upon "authority," however respectable, when the ordinary methods of trial and observation may be applied to this as to all other questions of scientific interest or practical importance. For the sake of clearness I shall divide all varieties of boilers into two classes. Under the first I shall include those which contain their water massed in a body, as the Cornish, the cannon, the conical, the saddle, the cylindrical, and the square-flued, which I propose, for want of a better name, to style non-divisional boilers. Under the second will come those whose fluid contents are partially distributed in divisions according to a regular plan, such as the multitubular, the upright tubular, the spiral tubular, the horizontal tubular, and the oblique tubular: these I shall designate as divisional boilers. This classification being founded on the two great distinctive principles of construction upon one or other of which all boilers, so far as I am aware, are manufactured, is evidently that which is most convenient for our purpose.

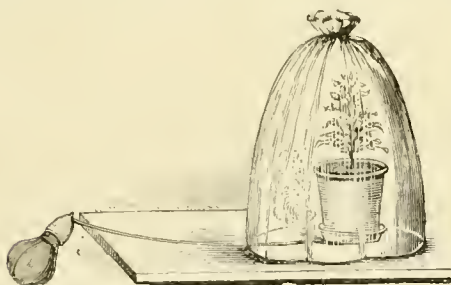
Now, whatever may be the particular geometrical form which a boiler assumes, it is in reality simply a vessel for the reception of water, designed according to the ideas of the maker for the purpose of absorbing heat, and proceeding upon a recognised principle which will be one of the two I have stated above. These facts well understood, it is easy to see that, instead of a contention between the saddle and the tubular as boilers, the question resolves itself into one of principles—namely, that of the divisional as against that of the non-divisional form of boiler. According to Mr. Robson the non-divisional is the principle upon which all boilers should be constructed, while I hold that the divisional is far to be preferred to it, and I am in a position to sustain my own view by a reference to some of the best known working examples. Independently, however, of published reports on the merits of any particular boiler, let us turn for a moment to our locomotives, and consider whether any non-divisional boiler could produce effects at once so rapid and so economical as these multitubular vessels: certainly no such example exists. And what shall we say of that marvel of power and speed in heating presented by the most recent type of fire-engine whose makers assert, and prove too, that their improved form and application of the tubular or divisional principle can bring water to the boiling point in ten minutes, and produce a steam-pressure of 20 lbs. in less than thirty minutes? Again, there are our marine engines, all of which are constructed on the tubular principle, for the very reason that it has proved itself beyond measure the most effective yet known; and also Field's patent tubes, which have borne the test of nearly ten years, and are at this moment in as extensive use as ever. So effective, indeed, is the tubular or divisional principle, that the mere addition of, as it were, the pendant tubes to the non-divisional form of boilers increases their efficiency nearly a hundred per cent. Is not this evidence of the superiority of the tubular principle? and has Mr. Robson anything comparable to it to adduce in support of the unscientific, now nearly obsolete, form of boiler of which he is so fond? But to come to a comparatively recent public test, I think we shall find in the reports of the Royal Agricultural Society on boilers that the tubular or divisional principle has completely eclipsed its competitor. Have we not also Howard's patent tubular, which from its similarity to the upright tubular we might fairly assume to have been suggested by it? Here is a boiler which, requiring to be set in brickwork, may be deemed the nearest approach to a garden

boiler that I know of, and its splendid performance has gained for it a reputation with which we are all familiar. But if Mr. Robsen wishes to test the principle for himself, let him take a vessel holding, say, ten gallons of water in an undivided body, and boil it, noting the time and the fuel expended in the operation. Let him then repeat the operation with a divisional vessel having, say, three tubes, and he will find it boil in a shorter time. Next let him try it with six tubes, and afterwards with twelve tubes, and he will find, farther, the time shortened with each increase in the number of tubes. I am really astonished at finding a principle seriously challenged which was conclusively established by the memorable trial of Stephenson's "Rocket" locomotive in October, 1829, and which has actually been the making of the railway system as it now exists. That principle consists essentially in the extension of the surfaces at which the water to be heated and the source of heat communicate; an arrangement by which the water and the heating products of combustion, divided with more or less minuteness, are kept apart by as little intervening matter as is consistent with their perfect separation.—A RAMBLING C.E.

### EARLY BEATRICE PEACH.

THE fruit of Early Beatrice Peach, exhibited by Captain Ashby's gardener on the 15th at South Kensington, will do all that is needful to establish the reputation of this valuable variety. We doubt if Peaches were ever ripened on the 31st of March in England before. When these were exhibited by Captain Ashby some of the members of Committee remarked that hitherto it was considered skilful cultivation to have such fruit in May. It is certainly a marvellous Peach, and will, along with other fruit he has raised, tend to perpetuate the name and the memory of Mr. Rivers, to whom we are so much indebted for these valuable acquisitions to our gardens.

**W. D. CARTER'S FUMIGATOR.**—The fumigator represented in the accompanying engraving consists of a hollow indiarubber bulb, into which a cork is fixed, the cork being made tapering so as to fit into any ordinary-sized tobacco pipe, and it is covered on the end with cement, to prevent its being burnt



when in use. A tobacco pipe having been two-thirds filled with tobacco the latter is set light to in the ordinary way; the fumigator is then fitted on the bowl, and a very gentle pressure on the indiarubber bulb creates sufficient draught to cause a cloud of smoke to issue from the pipe stem. It is certainly sufficiently simple, and seems worthy of a trial.

### NOTES AND GLEANINGS.

A REMEDY FOR HYDROPHOBIA has been presented to the Philadelphia College of Pharmacy by Prof. Maisch. It is called *trompatilla*, and comes from Mexico, where it is said to have been successfully used in the cure of the terrible malady mentioned. It is obtained from the stems of *Bonvardia triphylla*. If we recollect, this is not the first wonderful remedy that Mexico has been credited with. We can only hope that it will be more useful than other drugs.—(*English Mechanic*.)

—THE show of fruit in the houses at Sawbridgeworth is something to create wonder. Peaches, Nectarines, Apricots, and Grapes are in the greatest abundance, and produced with so much apparent ease that it is surprising to think that fine fruit should be so scarce as it usually is.

—MR. RADCLIFFE, in writing last week on Roses, said, "I have received this morning three beautiful blooms of one Rose, unexpanded, from Mr. Veitch. . . . It is the best

seedling that I have seen for some years." This Rose, we have since learnt, is Tea Duchess of Edinburgh, of which a high opinion was expressed by many when submitted to the Floral Committee a month ago. We have also to make a correction in respect to Peach Blossom, exhibited by Mr. William Paul at the meeting of the 15th instant. This is globular in its early stages, but cupped when fully grown.

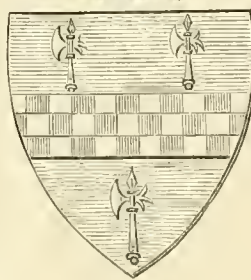
—WE are glad to find that the fine glass houses of Lady Rolle in the garden at Bicton have not been destroyed by the late fire, as has erroneously been reported.

### THOMAS TUSSEER.—No. 1.

WE have never been able to explain, nor could anyone explain to us, why the biography of THOMAS TUSSEER has been so little regarded. He was the earliest practical public writer on farming and gardening; his works have passed through more than twenty editions, the last appearing at the commencement of the present century, and many authorities have praised his literary labours. Warton, in his "History of English Poetry," says Tusser was "one of our earliest didactic poets in a science of the highest utility." Another authority says that he wrote "one of the most pleasant and instructive poems of the time." Fuller praises him for his "excellent rules laid down in his book of husbandry and huswifery," a book which, Warton adds, is "valuable as a genuine picture of the rural arts, domestic economy, and customs of our industrious ancestors."

"Tusser's writings," says Mr. Cuthbert Johnson, "were long the hand-book of the English country gentleman. He is deserving of the gratitude of the English farmer, for his labours tended to improve, refine, and elevate the profession." Yet Tusser's biography has been little sought into. He wrote a rhymed autobiography, of which we shall largely make use, but, unlike our predecessors, we shall add to it from many original sources which we have spared neither pains nor expense to acquire.

The earliest record we have found of the family is in the Herald's College, and in one of its records it is stated that "Richard Tusser, otherwise Tuzerd," was "of Shyrborne, in the countie of Dorset, gentylman," and that he had a son, "Wm. Tusser, otherwise Tuzerd, of Ryvenhall, in the countie of Essex, esquier." Of this William Tusser the pedigree extracted from the Herald's Visitation in 1570 is now before us. He married either Ann or Isabella, a daughter of Mr. Thomas Smyth, residing at Rivenhall, and sister of Sir Clement Smyth, of Tofts, in Little Baddow, in the same county, and who also was proprietor of Hoe Hall in Rivenhall. The manor of Tofts was possessed by William Toft, gent. He died in 1470, and



his only daughter, Isabella, married Thomas Smith, Esq., of Rivenhall, and their son, Sir Clement, married Dorothy, sister of Edward Seymour, Duke of Somerset. By his marriage with Miss Smyth William Tusser became father of five sons and four daughters. The eldest son, Clement, obtained a grant of arms in 1560, which the Clarenceux King of Arms declares in the grant were "the annexed armes belonging to that name and familye." The arms are these, and in the nomenclature of heraldry are described as azure a fess chequy argent, and gules between three battle-axes of the second. The crest upon the helm a lion's paw erased gold, armed gules grasping a battle-axe azure purfled gold on a wreath argent and azure.

The fourth son was THOMAS, whose biography we will now detail as best we may.

We think he was born in 1525, for in 1543 he was elected to King's College, Cambridge, apparently from the Royal choir, and eighteen was the age at which choristers were sent by the King to one of the Universities. Tusser tells—

"It came to pass that born I was,  
Of lineage good, of gentle blood,  
In Essex layre, in village fair,  
That Rivenhall hight.

Which village ly'd by Banktree side,  
There spend did I mine infancy.  
There thea my name in honest fame  
Remain'd in sight."

Banktree, or Branktree, as it was written in the sixteenth century, is the modern Braintree.

Being desirous of ascertaining if the house in which the Tussers resided at Rivenhall is known, we ventured to apply to the rector—the Rev. Bradford Deane Hawkins, and to his most kind and courteous attention we are indebted for the following:—"The Smyth family, into which Tusser's father married, resided at and were in possession of the farm called Lanhams, and that is where Tusser's father brought home his wife from Hoo Hall. The farm is the nearest to Braintree, at the extreme end of Rivenhall. The house was altered and modernised within these twenty years, but I found a drawing

of the house made anterior to those alterations, and as it probably existed two hundred years before. It is just of the same character as that in which Ray, the naturalist, was born, within a short distance of this, at Black Notley." From that drawing our engraving is taken.

Of the date of Tusser's birth there is no record, for the earliest existing entry of a birth in the Rivenhall register is in the year 1631. In childhood he had a musical voice, and his father, disregarding his repugnance and "tears from mother's eyes," persisted in sending him "to song school." No opposition

"Could pity make good father take;  
But out I must to song be thrust."

He was sent to the Collegiate Chapel at Wallingford, in Berkshire. It had then a dean, six prebendaries, six clerks, and



TUSSER'S BIRTHPLACE.

four choristers, but was dissolved in 1549. He thus describes his "chorister's misery":—

"O painful time, for every crime  
What touzed ears, like bated bears!  
What holbed lips! what jerks! what nips  
What hellish toys!  
What robes—how bare! what college fare!  
What bread—how stale! what penny ale!  
Then Wallingford, thou wert abhor'd  
Of seely boys."

His father was right in his determination, for Tusser's voice not only obtained him patronage in boyhood, but, remaining musical in manhood, was a resource when his agricultural pursuits failed.

At that period choral services were most assiduously cultivated, and the monarch, the bishop, and the peer spared no expense to have skilled choristers. The liberty of the subject was not then a prime article of the political creed, and one example of its being disregarded is that power was granted to press choristers and carry them off to serve in the choir of the grantee. This was done as early as the reign of Edward IV.; and as an instance of a later date, in the year 1550, Strype says a commission was granted "to Philip Van Wilder, gentleman of the Privy Chamber, in anie churches or chappells within England to take to the king's use such and as many singing children and choristers as he or his deputy shall think good."

In the third series of Ellis's "Original Letters" are interesting details of the difficulty and tyranny in obtaining choristers during Tusser's time. Henry VIII. thanks Cardinal Wolsey "for the chylde off his chiapell as he dydde bartly send;" so the Cardinal required of Wareham, Archbishop of Canterbury, "one Clement of his chapel which syngeth a basse parte." This was done without any consulting of the singer's wishes. When the king journeyed he took with him six singing boys and six gentlemen of his choir, which will explain some of Tusser's allusions. We have a list of the Earl of Northumberland's chapel choir, and its music was so superior that the Cardinal extorted from him his choral books.

Tusser was subjected to more than one of these impressions.

"Then for my voice, I must (no choice  
Away of force, like posting horse,  
For sundry men had placarde then  
Such child to take."

"The better breast"—that is, the better voice, the child had the oftener was he liable to be impressed, and that was Tusser's fortune, and "to serve the choir, now there, now here," he was forced about until he was enrolled one of the choir of St. Paul's. Whilst there it is probable that he was introduced to Lord William Paget by the organist and almoner, John Redford, who was no less distinguished for his care of his pupils than for his

excellence as a musician. That nobleman, as Tusser wrote, "was my founder," and power he had to be so, for he was a Secretary of State, and had been ambassador to the Court of France, whose king said of him, "Yonder is the man I can deny nothing to." Henry VIII. made him an executor of his will. He probably obtained Tusser's appointment to the royal choir.

This accounts for his subsequently becoming a student of Cambridge University, for the rule prevailed in that choir, "When any of these children come to eighteen years of age, and their voices change, he cannot be preferred in this chapel, the numbers being full, then if they will assente, the King assigneth them to a college of Oxford or Cambridge of his foundation, there to be at fyndyng and studye bothe suffycently, tylie the King may otherwise advance them."

That his university education was owing to his being one of the King's choristers he seems thus to notice:—

"Since being once at Cambridge taught,  
Of court ten years I made assay;  
No musick then was left untaught,  
Such care I had to serve that way."

### EXPERIMENTS IN HYBRIDISING.

PREVIOUS to the year 1865 I was frequently trying to cross the Clinton Grape with the best exotic varieties we had, but was unsuccessful, having to keep the pollen in a phial for some time, on account of those under glass blossoming in advance of those in the open air.

In 1864 I grew plants in pots of Clinton, Creveling, and Hartford Prolific. In the spring of 1865 I set those plants under glass, arranged so that I could retard or advance the blossoms by raising or lowering the temperature of the house. When they were sufficiently advanced I removed the stamens of about one-third of the blossoms from about two bunches on each plant, the remaining were removed entirely. I fertilised the Hartford Prolific with pollen from Black Hamburg, the Creveling with White Sweetwater, and Clinton with Golden Chasselas. (As I kept no record of the experiment I must write from memory.) There was about equal success; they were almost full bunches. But unfortunately a hen got at the Creveling and Clinton, and destroyed the most of them; from the Creveling I grew three plants, two of which were so tender in foliage as not to be worthy of trial. One being a very fine plant, I thought it almost perfect; it disappointed me, having imperfect blossoms. From the seeds of the Clinton I grew five plants. The thrips lived on them as long as there was a leaf left.

From the seeds of the Hartford Prolific I grew over fifty plants. They had the greatest difference imaginable in foliage; many of them would not resist the mildew, while some would curl from the effects of the sun. A few, however, are promising to be worthy of trial or cultivation. Nos. 18, 20, and 25 are white, and Nos. 5, 19, and 26 are black. The above varieties are all large in bunch and berries, hold their fruit well, and appear to have good foliage.

In 1867 I crossed Allen's Hybrid with Delaware; got about twelve plants, only two of which had foliage that would justify me in continuing the cultivation of them. One has fruited this year [1873]; produces a white Grape, or rather very light amber colour, with the flavour, foliage, and wood resembling that of the Delaware.

I have frequently made efforts to cross the different varieties of Pear in the blossom, always using bags made of tarlatan to prevent the blossoms being fertilised by natural means. I think it a very poor protection. I have several seedlings produced in this way in 1869; nearly, or quite all of them are perfectly thorny. The varieties used were Beurré Clairgeau, Beurré d'Anjou, Passe Colmar, Fondante de Noël, &c.; but I kept no account of the experiment, and which varieties were used as male, but have a record of the varieties of the fruits that the seeds came from—the female. I budded from fifty-eight of the most promising of the plants the same year from seed (or in 1870), in a bearing tree, none of which have fruited or shown fruit buds as yet, but nearly all are thorny.

In 1870 I experimented largely with the Pear; as I had been gaining experience I expected success. The Pear blight took every branch except one that was operated on, and that was Osband's Summer crossed with Duchesse d'Angoulême. I only got one plant; that one is not thorny, it shows distinctly in the foliage and wood the habit of both parents.

In 1871 I planted some seeds of the Bartlett and Flemish

Beauty Pear, intending to use them for stocks; one plant resembled the former, and appeared to grow fine. I grafted the tops in a bearing tree. Last spring, one year from graft, it had one bunch of blossoms that had so great weight, with the help of a little rain, the branch broke; it has now over forty blossom buds. I only mention this as an exception to the rule laid down by some authors—seventeen years from seed for a Pear to fruit.

After so many years of failure I adopted the theory laid down by Mr. Rivers in his "Miniature Fruit Garden," to root-prune some of my Pear and Apple trees. I differ with Mr. Rivers in the time to perform the job; he does it in the fall; I prefer the month of April, as soon as the frost is out and the land sufficiently dry to work. I take the tree up, shorten all the roots that extend deep into the earth, and those side roots that are growing too strong, and plant in the same place, being careful to raise the roots as near the surface as possible. Manure on the surface. I prefer to commence with a tree one year from bud or graft, and transplant each alternate year.

By this process, and summer pinching or pruning, we can bring a tree into fruit when three years from the bud, and nearly 2½ or 3 feet in height. I planted some trees in pots, tubs, boxes, &c., such as were convenient.

The advantages in having these small trees are: First, we can operate on the whole or a part of the blossoms as we please, only remove those not required. Secondly, we protect them by making covers of newspaper or any refuse paper, by cutting them away the shape of the tree, and paste together, and place them over it. If there comes a rain, as it so often happens, these covers are supported by the ends of the branches, and the blossoms effectually protected. A strong wind will destroy them when wet; they must be carefully looked after, and replaced with others when anything happens. The third advantage should not be lost sight of. We take the tree up, and plant by the tree bearing the variety of fruit we wish to use for the male. A large tree should always be chosen for this purpose when it can be had. The east side of the tree should be chosen where possible to plant; in this way we can operate without any protection, providing there are no other varieties very near. I had last spring twenty Pear trees prepared as above. On some I used the protectors, and others were planted as described above. They ranged in height from 2 to 5 feet. I operated on the blossoms with great success; the results I give:—

No. of trees in operation.	Female Blossoms.	Male Blossoms.	No. of fruit obtained.	No. of seeds obtained.
1	Seckle	Beurré Clairgeau	27	6
1	Bartlett	d'Anjou	15	76
2	Beurré Clairgeau	Duchesse d'Angoulême	23	159
1	" "	Flemish Beauty	14	99
1	" "	Joséphine de Malines	2	16
1	" d'Anjou	Duchesse d'Angoulême	7	45
1	Doyenné Boussoch	Duchesse d'Angoulême	11	44
1	Belle Lucrative	" "	30	37
1	Seckle	" "	2	2
1	Joséphine de Malines	Flemish Beauty	3	19
1	Winter Nellis	" "	1	5
1	Duchesse de Bordeaux	Duchesse d'Angoulême	1	5
1	Madame Beauford	" "	1	10
1	Osband's Summer	" "	87	380
1	Flemish Beauty	" "	1	5
1	" "	Beurré Clairgeau	2	9
1	A new variety, imported 1871; name lost; a very fine December Pear, large.	Joséphine de Malines	1	1
1	Doyenné du Comice	Flemish Beauty		failed.
1	Flemish Beauty	Beurre Hardy		failed.
1	Belle Lucrative	Louise Bonne		Had one Pear, lost.

As the trees were all exposed during the whole of the season, some of the fruit were blown off in September; they were all saved, but not separated; there were nearly one hundred of them, with about five hundred seeds.

I have made several efforts to cross the Pear with the Apple, and the Apple with the Pear, but always failed till this year (1873), and this remains still to be tested, the seeds being in the ground. In preparing for the experiment I selected seven small Apple trees, grown on Pommier de Paradis stock, planted in pots, boxes, and tubs, everything I had that would do. The varieties selected were Cellini, Lord Burghley, Lord Derby, Lord Duncan, Ecklinville Seedling, Margil, and Cox's Orange Pippin, mostly new varieties, and all imported. Pear trees on Quince stocks were treated and planted the same as the Apples. Had one tree of Duchesse de Bordeaux, and two trees of Joséphine de Malines. The trees were all set under glass about the 1st of April; they came in blossom about three

weeks sooner than those in the open air; so there was no chance for the blossoms to become fertilised from trees in the open air, or those growing out of the house.

I carefully removed all the male part or stamens from the blossoms on the Apple trees—where there were too many blossoms I thinned them—and applied the pollen of the Pear blossom three or four times a-day, as long as they remained fresh. If they were fertilised by any natural source, or with the aid of insects, it must have been with a Pear. I applied the pollen with a fine camel-hair brush part of the time, and sometimes by picking the blossom off, and giving it a sudden twist over the Apple blossom, by taking the stem between the thumb and finger. I prefer the latter method, but they must both be in bloom at the same time.

The result of this experiment was four Apples, all on one tree, variety Cellini, only seven seeds.

Cellini Apple is large, striped and splashed with red, a very pretty fruit, and matures about November to December. Those ripened in October, but they were about the size of a cent when those in the open ground were in blossom.—P. C. DEMPSEY.—(Report of the Fruit-growers' Association of the Province of Ontario.)

### THE NEW MODE OF GLAZING.

A CORRESPONDENT from Yorkshire writes thus in allusion to the mode of glazing described by Mr. Robson at page 287, and sends a section of the glazing bar recommended. We append some additional notes from Mr. Robson.

"If the enclosed suggestion for glazing by the new method with cork wedges instead of putty is of any use you are welcome to it. I have not tried the system, but having the wedges outside seems open to the objection of giving access from the outside to anyone disposed to meddle with valuable fruit where the garden is not well fenced. The price of the indiarubber flange tubing is 1d. or 2d. a-foot.—P."

I AM exceedingly glad to have the suggestions of "P." which are both practical and to the purpose, and I trust others will come forward and give their advice also. Comparatively few things present themselves perfect at first, and very important improvements are often made afterwards. In the present instance our correspondent's view of preventing the rain penetrating at the sides is a useful suggestion, and I had at one time thought of advising the indiarubber tubing he speaks of, but from what I have seen of that article as used between window sashes to prevent rain or wind penetrating into a dwelling room, it has decayed so fast that I hesitated to advise its use in a case where putty was complained of for the same fault. Nevertheless, I am not without hope that a better material may be discovered. If some cheap material sufficiently elastic to fit between the glass and the glazing bar could be contrived, one which also possesses the property of being water-tight, success would seem certain.

From the diagram (fig. 1) it will be seen that "P." contemplates reversing the mode of fastening the squares of glass as

given at page 287, and instead of their being fastened outside, as done in Mr. Neve's house at Chart Sutton, he recommends their being fastened inside or underneath, and suggests the small



Fig. 1.

- a, Rafter.
- b, Piece of wood 2 inches long screwed to.
- c, Indiarubber flange or draught tubing.
- d, Cork wedges.
- e, Lap of glass.

block for that purpose should be on the under side, as well as the cork wedges, giving as a reason the facility which the former way affords to a dishonest person getting to the fruit. Without offering any opinion on the latter subject, I certainly think if something could be contrived to prevent the wet entering it ought to be on the outer or upper side of the glass, and I hope to hear of something better-adapted for that purpose than the indiarubber tubing referred to. Could not some manufacturer prepare a kind of felt or other material sufficiently elastic to form a joint between the glass and the wood or metal, that would prevent wet finding its way inside? I should think that among the many materials now at command there must be something that would accomplish this object and be less costly than indiarubber tubing. An application of the same ingenuity which presents us with so many kinds of floorcloths could assuredly supply a material for the purpose.

Then as to the blocks and wedges which "P." places under-

neath, I have been thinking if the glazing bar were grooved-out square, as shown in fig. 2, there would be room for the pad above and the wedge below the square, and blocks might be dispensed with. It is true all the squares would have to be

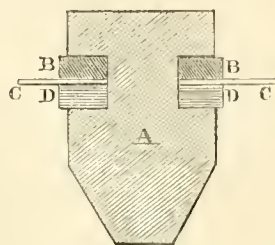


Fig. 2.

- A, Glazing bar or rafter.
- B, Pad of felt or some similar material.
- C, Glass.
- D, Cork wedge.

put in at the bottom of the light, which might be inconvenient, but I have seen more than one kind of putty-glazed house where this had to be done with much greater difficulty. Possibly someone may suggest still further improvements, and the matter is certainly deserving of attention.

Fig. 2 represents a glazing bar with a groove to receive the glass, with some pad or stuffing on the upper side of it to render it water-tight, and the cork wedge below as has been described, but I am far from thinking it is the best arrangement that can be adopted, for the whole thing is only in its transition state, and until manufacturers can supply us with a suitable material to form a water-tight packing, I fear we must grope in the dark. I may, however, say that if it be found impracticable to make between the two a tight cement joint that would keep out water at all times, certainly one could be found that would keep it out when it was once wetted. The ordinary caulking adopted with timber-built ships will do this, but I should think something like the sheets from which gun wads are made might answer the purpose. Certainly something may be done to lessen the present heavy expenses of paint and putty, and if "P." can recommend a durable kind of indiarubber tubing it is certainly as likely to answer as anything else. One thing, however, may be depended on, that if once a demand sets fairly in for a quantity of such an article it is sure to be met. Let us, therefore, hope that such will be the case, and that the mode of glazing referred to as well as others may be fairly tested.—J. ROBSON.

### THE ORCHARD HOUSE AT BLENHEIM.

I HAVE read the details of Mr. Fountaine's system of having double crops from his vinery, and I do not know if ever it has been adopted here or not. The house is simply used for growing fruits in pots, with a back wall getting well covered with Peach trees, and as there is no reason why the trees should be wheeled-out, I have simply planted one-half of them in the bed of soil forming the inside border to save labour. I need scarcely add that during the growing season one-sixth of the watering will be required compared with those in pots. When replying to the inquiries of the gentleman who took notes of the gardens here, I said nothing with the view of under-rating Mr. Fountaine's ingenious invention, though it is of no use where Vines or Peaches are not grown overhead. If I had found Mr. Fountaine's system fully carried out, it is probable I would have gone much further into it than is described.

It is well known to many practical men that stone fruits, trained or planted out, have been grown successfully for many years—long before my gardening experience—with Vines trained up the rafters, and abundant and excellent produce from both above and below secured. At Wrotham Park, when under the management of Mr. W. Thomson, excellent Peaches and Grapes were grown under the same roofs, and I believe many prizes taken by them; also at Rendlesham Hall, by the late Mr. W. Allan, the system was adopted with great success; and during the last ten years Peaches and Grapes from the same house have helped collections of fruits which I have exhibited to hold good positions. To give variety cordons may be trained on wires under the Vines and up the back walls. I saw the house at Chiswick last season, and was one of those who admired the Madresfield Court Grapes—fine bunches, and very large berries they were, and offering then to colour well. But I must confess that the system at Chiswick, even under the skill of a Barron, did not raise it in my mind, or lead me to think it was a profitable method of growing fruits. When looking at it in the *£ s. d.* point of view I fear market men would not be ready to adopt the plan, as I know, from early experience in London market establishments, that a house to pay must not only be crammed with fruit, but

many other things are brought forward for sale to give a fair return.

It is fair to state that when I came here a year and a half ago I proceeded to plant Vines in the house, but I soon observed that there had been Vines planted there before, and on inquiry I was informed that they had offered to do well, but were ordered to be taken out. So I at once abandoned the idea and prepared the trees for work, and many of them, especially Plums, Peaches, and Nectarines, bore fine crops of large finely-flavoured fruit. I never saw Green Gages so fine in the most-favoured districts in England. The trees evidently had been managed with skill before they fell into my hands, and I would follow out the pot system were it not the enormous amount of labour it entails from the waterpot. The interest and knowledge it affords in a pomological sense is of great value; but proprietors generally require profits in a tangible form.

In conclusion, I believe that Mr. Fountaine's system can be adopted with success, and if I were to give it a trial on its widest merits I would take out the end of a well-established vinery in which such hardy Vines as Black Hamburgs, Buckland Sweetwater, Muscadine, &c., are grown; and when the pot trees were clothed with firm foliage, the fruit nicely set and well hardened with air, they could be wheeled-out or plunged in a sheltered border under a wall, and have the usual attention. The Vines at the period the stone fruits were set would be fit to tie down in their position, and then have the whole house to themselves. Peaches grown overhead would answer the same purpose. We have a number of Cherries, &c., set nicely under Peach trees, but the increasing foliage warns us that we must move the pots to where they can have light and air.

To the inexperienced I would advise that they should go personally and see any system of fruit-growing before they spent their money on structures, &c., as we often hear and read of splendid crops of fruit on trees in pots, &c., at exhibitions and elsewhere, but when they are seen by experienced men they diminish into miserable failures, and are a burlesque on skilful fruit-growing. It is, on the other hand, true that some can never give the credit due to a successful neighbour, or accept any system out of the old rut.—M. TEMPLE.

#### NOTES ON VILLA AND SUBURBAN GARDENING.

The cultivators of the soil, both on a large and small scale, require a considerable amount of patience, since their efforts are continually opposed by numerous tribes of depredators. Each season brings with it peculiar enemies, whose attacks will soon overturn the efforts of labour, taste, and skill, unless they are diligently guarded against. Birds will rob you of all your seeds before one is allowed to vegetate; cats will disfigure your flower beds, and most provokingly scratch-up young plants, however choice they may be; hares and rabbits will nibble off Carnations and Pinks, leaving only some unsightly stumps; and moles will form miniature tunnels under the roots of Roses, &c. Children do not hesitate sometimes to run over a flower bed in search of a ball; and adults, who are ignorant of the mysteries, often leave their footprints on spots where tender seedlings are just coming-up. Verily, amateurs need the patience of Job in the midst of such repeated and constant inflictions. Long as the above catalogue is, it includes only a few skirmishes with the enemy, for myriads of insects are always pursuing their destructive tactics in a greater or less degree. How can the pen adequately describe the mischiefs wrought by the slimy race of slugs and snails? In frosty weather, indeed, these ruthless foes disappear, or a long drought may seem to have driven them away; but let a mild day visit us even in the middle of winter, or a shower of rain lay the dust of summer, and these are devouring all before them, as if called into new life. Woe be to the florist in whose frame two or three lie concealed. How often has one in a single night marred the labour of months! Then come the woodlice, having a fine taste for all that is tender in vegetation, from the cotyledons of seedling Ranunculuses to the petals of Roses. Earwigs hide their detested shapes in every hole and corner, and, assassin-like, deal their deadly bites under the cover of darkness. Red spider and the green fly bring up the rear, and, with wonderful fecundity, multiply by thousands in a day, till the unhappy gardener is at his wits' ends.

The above are all either dwellers on the surface of the ground, or carry on their operations there; but there are other insects whose attacks are concealed beneath the soil, and which it is still more difficult to guard against. In the early spring the wireworm saws away at the lower stems of Pansies and Carnations, and we know nothing of the matter till the withering of the whole plant makes us acquainted with our loss. Throughout the year larvae of various kinds thus blast the hopes of the

cultivator, by undermining or destroying the roots; in short, the attacks of enemies are constant, and therefore war must be interminable. A gardener must necessarily be a great destroyer of life, or that life, if spared, will soon destroy him. I shall not enter into the natural history of insect enemies, but shall confine myself to the best methods of extirpation by-and-by, so that the amateur may be assisted in guarding himself against the annoyance of loss.

Perhaps the greatest error which we commit in the management of our flower gardens is that of turning half-hardy plants out into the borders before the middle of May. In the case that I am aware of can any advantage accrue from this practice, but it is well known that plants frequently sustain injuries which they are half the summer in recovering from. I may be told they are sooner in bloom, and this I grant, because the check they receive from the cold nights and dry parching winds is favourable to the production of flowers. But what is the bloom? a few miserable spikes on a more miserable plant, and a bed not more than half furnished with foliage, in which deplorable state the plants remain until the genial showers of June or July excite them into new growth.

If, instead of planting out thus early, we took more pains in preparing the plants and the ground properly, and if we deferred planting until the last week of May or first week of June, at which time we may take advantage of a few dull days, we should find the plants materially benefited, and the appearance of our gardens on the whole signally improved. At that season we have the concurrent advantages of terrestrial heat and the warm dewy evenings, which are of the greatest advantage to the development of vegetation. The preparation of plants for turning-out has been adverted to in former articles, and, as a general rule, it may be stated that no plant ought to be turned into the borders until it has been gradually prepared and inured to the open air for at least six weeks from the time it was taken from the cutting or seed pot.

Where beds are stocked with spring-flowering plants it will be advantageous to dig or fork them over in the evenings of warm days, by which means a considerable portion of heated soil will be worked into them. In heavy soils on a wet and retentive bottom this kind of preparation is indispensable. Of the plants which require to be prepared now for autumn-flowering in the greenhouse or drawing-room, the Chrysanthemum is the principal one. Directions for its management have been already given; but for the purpose of the amateur, as being the least troublesome, to plant them out next month in rich soil, layer the tips of the branches in August, and pot the dwarf plants in September, as will be detailed at the proper time, is the best system of management. The Chrysanthemum for a low east, west, or south wall makes an excellent covering, and some of the earlier kinds will flower tolerably well on a north wall in favourable seasons, and give, with a little protection, a good supply of flowers up to Christmas.

Propagate Scarlet and other Pelargoniums for autumn-blooming in pots, and make a small sowing of Chinese Primula for early flowering. Rose stocks for budding must now be looked over, and have all their superfluous branches removed; and those in pots would be benefited by being plunged in a gentle bottom heat to get the roots as well established as possible before the plants are budded. The propagation of the Rose by cuttings I must defer until next week.—W. KEANE.

#### DOINGS OF THE LAST AND PRESENT WEEKS.

##### KITCHEN GARDEN.

The early Potatoes on a warm border are well through the ground and look very healthy. The leaves have a growing look, not curled up as they are when exposed to drying east winds. Ran the Dutch hoe through the ground, and also drew some earth to the plants with a draw-hoe. There is great danger of frost injuring them as yet, but if the plants are earthed-up they will be saved to a certain extent. It is also worth while to cover them with something if the frost is likely to be keen. A pot inverted over each plant is a good covering, or some straw thrown lightly over the plants will serve the same purpose. After trying a number of different sorts of early kidney Potatoes, Myatt's Prolific has proved itself to be the earliest and best grower.

Made another sowing of Peas, with Spinach between the rows. Just as the Peas show through the ground the sparrows nip them off if the rows are not protected with wire netting. This is no protection for mice, which get in somehow and attack the seeds before they have had time even to vegetate: a figure-of-4 trap is a good means of destroying them. Peas may be used as a bait. Mice do not take kindly to Broad Beans. Pricked out Celery under hand-lights; the plants had been raised in heat, and were well hardened off before putting them out. The glass is kept rather close for a few days, and afterwards air is admitted more freely. When the plants are well established the glass covers are kept off altogether, only covering during severe weather. Planted out Lettuce, and made a fresh sowing; also

made sowings of other small salads, Mustard and Cress, Radish, &c. Small aslading of this character is very easily produced, and for this reason but little attention is given to it; but it is nevertheless one of the important details of a gardener's work, and should not be overlooked. Vegetable Marrows ought now to be sown on a hotbed. There are many different varieties to select from, but one sort is quite sufficient where utility is the object in view. Moore's Vegetable Cream is the best and most tender when cooked.

#### FRUIT AND FORCING HOUSES.

*Cucumber and Melon Houses.*—Cucumbers now grow freely, and little difficulty is experienced in cutting plenty of excellent fruit, nor do we care much about variety; one sort is sufficient, and generally every gardener has a variety of his own which he thinks better than other people's. When the plants are grown in houses heated by hot-water pipes it is very easy to preserve a good variety by cuttings, and this is the only way to keep it true. The finer varieties of Cucumbers are very shy in producing seeds, and this does not apply exclusively to the long exhibition sorts. The best variety of Telegraph is a very shy seeder. The best Cucumbers are obtained in a moist atmosphere, and a temperature of from 70° to 75° at night. Melons have set their fruit pretty freely, and the earliest and best variety to set its fruit is Gilbert's Improved Victory of Bath. This Green-fleshed sort and Scarlet Gem can be recommended as the best in their respective classes for those who have not had much experience in Melon-growing. There is much difference of opinion as to the number of fruit that ought to be grown on a Melon plant. Some persons would allow a single plant to mature six fruits, others would say two were sufficient. For general purposes very large fruits are not required, and as a rule each plant that has sufficient space to develop itself will bring to maturity from four to six fruit. All the flowers on a plant should be set within twenty-four hours of each other, so that they may swell evenly: 65° is a very good night temperature for Melons.

The Peach and Nectarine trees in the orchard house have freely set their fruit, but Pears and Plums in the same house are only now in full flower, and until their flowering period is over it is better not to use the syringe. Pears, Plums, and Cherries under glass do not set so freely as Peaches. Strawberry on the shelves are throwing up trusses of flowers; the earliest of them have been thinned out. It requires a watchful man to attend to Strawberry plants on shelves, and he ought also to thoroughly know his plants. The pots, if the plants are worth anything, are crammed full of roots; and should the soil become overdry, so that the ball cracks away from the sides of the pot, the plant will suffer very considerably. Use weak manure water every time the plants require watering. They should be freely syringed every morning underneath the leaves.

#### GREENHOUSE AND CONSERVATORY.

*Stage and Fancy Pelargoniums* are now throwing-up their flower trusses, and as some green fly is to be found in the houses fumigating with tobacco smoke has been necessary. This fine section of Pelargonium is easily managed; the plants require a good supply of water at the roots, and are more readily injured by the lack of it than the Zonal. They must also be kept free from green fly. Should this pest not be destroyed before the flowers open, it cannot be dislodged afterwards without materially injuring the plants. Tobacco smoke causes all the expanded flowers to drop their petals.

In previous numbers allusion was made to those fine old plants *Hovea Celais* and *Leschenaultia biloba* major. They are now coming into flower, and a few plants of each are very pretty in small greenhouses. They are prized for their distinct blue flowers, which are freely produced. Attend to shading plants in flower. Primulas, such as *P. cortusoides* amena, and its varieties alba and lilacina, are not so much grown as they ought to be; the variety amena is very far superior to the much-lauded *P. japonica* as a decorative plant, and withal is not so attractive to insect pests.

#### FLOWER GARDEN.

The lawn requires to be run over with the mower once a week; the grass grows rapidly, and if it is not kept close its appearance will be spoiled for months. All sorts of Zonal Pelargoniums, Verbenas, Lobelias, Ageratums, and others of the more hardy class of bedding plants may now be turned-out in turf pits if the space under glass is required for other plants; of course, where the pits are not required for any other purpose, it will not be necessary to remove the plants, but the lights should be entirely taken off during the day. Alternantheras, Coleus, and Iresine should yet be in a house where a little artificial heat can be given; of the former we have not yet sufficient stock, and have put in more cuttings in heat. *A. amena* is the best, and the slowest grower.

Planted out the main collection of *Gladiolus*; the ground is in excellent condition this year. The soil is rich, and to secure success a little sand is placed under and over each bulb. Auriculas are now in full beauty, and the flowers must be shaded from the sun in order to prolong the bloom.—J. DOUGLAS.

#### ROYAL BOTANIC SOCIETY.

THE second spring Show of this Society was held yesterday, and though, as compared with its predecessor, of less interest, and not on the whole remarkable in a cultural point of view, it was a fairly good minor Show, and was favoured with summer-like weather.

Of Roses in pots a beautiful group of nine came from Messrs. Veitch, of Chelsea; Charles Lawson, and Teas Madame Willmott and President being especially good. In the nurserymen's class for Azalea Messrs. Lane were first, and in that for amateurs Mr. Marcham, gardener to J. Mitchell, Esq., Iver, and Mr. James, gardener to W. F. Watson, Esq., Isleworth, took the lead with well-flowered plants. For Cinerarias the same exhibitors stood in the same order. For Amaryllis a very good half-dozen from Mr. Harborough, gardener to C. Keiser, Esq., had a first prize. *Dieleytra spectabilis* from Messrs. Veitch was well represented, and smaller specimens came from Mr. Reeves, Acton, and Mr. G. Wheeler, gardener to Sir F. Goldamid, Bart., Regent's Park. Messrs. Lane, of Great Berkhamstead, had a finely-flowered dozen of hardy Rhododendrons in 12-inch pots, taking a first prize.

Stove and greenhouse plants from Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, included several excellent specimens of Orchids, and in the class for six (Orchids excluded) the same exhibitor had *Anthurium Scherzerianum* with finely-developed spathe, 5 inches by 4. In each case Mr. Wheeler was second. In Heaths Mr. Ward and Mr. Wheeler were again the prizetakers; whilst for Mignonette Messrs. Rolleston, of Tooting, had it all to themselves.

Highly ornamental miscellaneous groups were furnished by Mr. Williams, of Holloway, and Mr. G. Wheeler; a profusion of beautiful Roses in pots by Mr. W. Paul. Mr. Needler, gardener to the Comte de Paris, sent a fine collection of hardy species of Ophrys and Orchis; Mr. James, Auricula and Pansy; Mr. Hooper, of Bath, a fine stand of Pansies; Mr. Walker, Thame, *Marchal Niel* Rose remarkably fine for this time of year; Mr. W. Paul, a numerous collection of variegated Pelargonium; and Messrs. Jackman, of Woking, a grand collection of Clematis.

New plants were numerous represented in groups from Messrs. Veitch, Williams, and others. Certificate were awarded to Messrs. Veitch for *Ficus Parvifolia*, *Dracena Hendersonii*, *Croton ovalifolius*, *Abutilon Sellowianum marmoratum*, *Agave Leopoldii*, *Cattleya gigas*, *Drosera capensis*, and *Acer vitifolium flavescens*; to Messrs. Rolleston for *Hypolepis Bergiana*; to Mr. Williams for *Ceterach aureum*, *Gymnogramma triangularis*, and *Amaryllis Mooreana*, fine, broad-petaled, deep scarlet; and to Mr. W. Paul for *Betula alba folia purpurea*, with, as above, olive leaves; also for *Rosea Perle des Blancs*, a free-blooming white Hybrid Perpetual; *St. George*, dark crimson; and *Marie St. Arnaud*, very pale lemon. Mr. Parsons, Welwyn, had also a certificate for *Azalea Duchesne* of Edinburgh, large, very fine form, pale reddish salmon. Messrs. Jackman had like awards for *Clematis Monikists* Oké, large, pale lilac; *Duchess of Edinburgh*, a splendid semi-double white; *Sir Garnet Wolseley*, violet; and Mrs. Moore, with extraordinarily long petals, white, with a flush of lilac.

A very nice although small collection of Auriculas was sent in for the competition for prizes offered by the Metropolitan Floral Society; and we were glad to see that in addition to well-known exhibitors of the flower Mr. Douglas, of Loxford Hall, Ilford, who is so well known for his success as an exhibitor in anything he undertakes, took a leading place. He took the first prize for six Auriculas with a fine plant of Lightbody's Robert Traill, Popplewell's Conqueror, Smith's Formosa, Lightbody's Meteor Flag, and two others. Mr. James, gardener to W. F. Watson, Esq., Redleaf, Isleworth, was second; and the Rev. H. H. Dombrain, Westwell Vicarage, Ashford, was third with Campbell's Pizarro, Hudson's Apollo, Headly's George Lightbody, Sims's Vulcan, Popplewell's Conqueror, and Smith's Ne plus Ultra. In class showing, for one green-edged Auricula the Rev. H. H. Dombrain was first with Lancashire Hero, Mr. Douglas second with Hudson's Apollo, and Mr. James third with Lovely Anne. In grey edged Mr. Douglas was first with Robert Traill, the Rev. H. H. Dombrain second with Richard Headly, and Mr. James third. In white edged the Rev. H. H. Dombrain was first with Taylor's Glory, and Mr. James second with Smiling Beauty. In selfs Mr. Douglas was first with Master Hole, Mr. James second with Charles J. Perry, and the Rev. H. H. Dombrain third with Spalding's Metropolitan.

#### TO CORRESPONDENTS.

BOOKS (B. Russell).—Your contraction is unintelligible.

BEETLES ON VINES (*Guernsey*).—They are weevils. The larger one is *Circulio picipes*, the two smaller *C. cupreus*. Use the remedies directed on p. 283 of our number published on the 2nd inst.

DESTROYING EMETS (*A Constant Subscriber*).—The best method of destroying these as well as the lesser kinds of ant is to saturate their nests at night with ammoniacal liquor from the gas works. You may use it at some distance from the stems without injury to the trees; but if the nests are at their base we should dislodge the emets by sprinkling guano, and when they move to a spot where ammoniacal liquid can be used, apply it, re-

peating at intervals until the ants are driven away or destroyed. The guano should also be sprinkled round the stems of the trees. A sprinkling will suffice to cause the ants to shift, repeating the application as it is washed in by rains.

**PEAR TREES FOR PYRAMIDS (Reader).**—On your soil Pears would succeed on the Quince stock if planted on the surface and the roots covered with soil—the uppermost about 3 inches deep—forming a cone flattened at the top, and top-dressing in summer with short manure. Suitable varieties are *Citron des Carmes*, *Bourré Giffard*, *Bourré d'Amanlis*, *Williams's Bon Chrétien*, *Benrè Hardy*, *Fondante d'Antonne*, *Comte de Lamy*, *Lonise Bonne* of Jersey, *Seckle*, *Marie Louise*, *Thompson's*, *Bourré Diel*, *Jean de Witte*, *Zéphirin Grégoire*, *Bergamotte Esperon*, and *Ne Plus Meuris*. They will all succeed on the Quince except *Marie Louise*, *Jean de Witte*, *Seckle*, *Ne Plus Meuris*, and *Thompson's*, which are best on the Pear stock.

**BEDDING PELARGONIUMS OVERVIGOROUS (Idem).**—It would materially check their growth to plunge them in the beds with the pots sunk to the rim. The soil is no doubt too rich and loose. If it were firm it is likely they would make shorter growths and flower more freely.

**IVY LEAVES EATEN (J. W.).**—The leaves are probably perforated by the caterpillar of some insect. Choosing a dry day, mix 1 oz. of white hellebore powder with a gallon of water, and in the evening stir it well up, sprinkle the Ivy through a rose watering-pot, making the leaves wet. It may be necessary to repeat the application in the course of a week or ten days.

**FUMIGATING WITH HOME-GROWN TOBACCO (H. E.).**—The tobacco must not have been properly prepared for fumigation, or it would not have proved injurious to the foliage of *Azaleas*. The mode of preparation of British-grown tobacco is given at length in "The Gardeners' Year-Book" for 1874, page 95. Dried without preparation it is not safe to use for fumigation, being apt to injuriously affect the foliage.

**TURF ASHES—RED-LEADED PEAS TAKEN BY RATS (Idem).**—The turf ashes may be advantageously employed on ground for vegetable crops. It is valuable for Onions, Potatoes, Cabbages—in fact all kitchen-garden crops, and is especially valuable for heavy soil. A dressing an inch thick or more will do no harm mixed with the soil by forking before sowing or planting. Rats occasionally take Peas that were red-leaded before sowing. Two years ago they cleared three rows, removing the shell as you describe; and again this year they have taken a few here and there in a row 60 yards long, but are evidently anything but satisfied. These are the only instances in our experience that they have attacked Peas well moistened and thoroughly coated with red lead. We should cover the row, say 8 inches wide and 1 inch deep, with coal ashes. It is just when the Peas are appearing above ground that the rats take them. We have tried covering with netting, but the rats burrow under, and we find ashes more effectual. Trap them in their runs and holes.

**ORCHIDS (Notes).**—Your Orchids are all *Dendrobiums*. That with two flowers is *D. nobile*, the large single flower is *D. Wardianum*, the small one *D. pulchellum*. The *Cineraria* is a very fine showy flower, but as far as we can judge not deserving a name; it has a very large centre, which is a decided fault.

**AURICULA (Inquirer).**—The Auricula with which you have been familiar for nearly forty years, the plant being very common as an edging for the garden walks of poor people, is a species differing from the common sorts used for the same purpose in cottage gardens. It is *Primula viscosa*. You give it a good character by saying it always maintains one uniform distinct colour, habit, and period of flowering, in the latter respect being earlier than the others.

**DRYING FUNGI FOR HERBARIUM (Mac.).**—To dry and preserve the fleshy fungi they must first be placed in a dry place for twenty-four hours, more or less, so that they may part with any superfluous moisture, then they may be dried between bibulous papers like flowering plants. They, however, require more frequent changing, and before the fungi are put away they must be well washed with corrosive sublimate to prevent the attacks of mites, &c. For every practical detail regarding this somewhat difficult subject see "Science Gossip," No. 93. Price 4d. Kent & Co., Paternoster Row.

**DENDROBIUM DENSIFLORUM (A Cheshire Lady).**—With nine spikes of bloom it is no doubt very handsome, but it is not unusual to see it produce this number.

**LATE-KEEPING BLACK GRAPE (G. W.).**—There is none better than the *Lady Downe's*.

**SOIL FOR GENTIANELLA (Idem).**—Any light garden soil will suit it. A little peat mixed with the soil is an improvement.

**YELLOW CARNATIONS (Exeter).**—Write to Mr. Turner, Royal Nurseries, Slough, on the subject.

**LILYUMS NOT GROWING (H.).**—We should consider the bulbs had lost their growing parts or centres, probably from the "good watering" given them at potting. It may be that the soil is dry, and all the plants need is a proper supply of moisture. Water them, not over the bulbs, but around the sides of the pot, and place in the greenhouse, where, if you keep the soil moist, you will soon ascertain whether they will grow or not.

**VINES FOR GREENHOUSE (Idem).**—In your house, and with so narrow a border, you will not be able to have more than two Vines, which we should plant 4 feet 6 inches from each end. We would take three shoots from each Vine near the bottom of the rafter, train one upright, and the other two right and left along the front of the house for a distance of 3 feet 6 inches, and then up the roof, which will give you three rods to each Vine, at 3 feet 6 inches apart, and 18 inches from the ends. The border will need to be well supplied with water, and after the first year frequently top-dressed with rich compost. A Black Hamburg and Buckland Sweetwater (white) would be suitable.

**VEGETABLE MARROW FAILING (J. L., Preston).**—We think the failure has arisen from the excessive quantity of stable manure, the moisture of the soil, and the dull season. Plant on a raised hillock in a sunny sheltered position, and water freely in dry weather. All you need is a warmer and drier situation.

**TEA ROSES FOR CONSERVATORY WALL (L. N.).**—If the wall has a southern aspect, and the roof is not covered with climbers so as to shade the wall, it will answer for Tea Roses; but a 3-foot wall is much too low for them to do any good. We should have a border for climbers there, and a shelf for plants next the glass, the climbers being taken through openings left in the shelves at the required places. We do not recommend any particular form of house, merely wishing to have as much light or glass as possible, no more woodwork than is required for stability, and abundant provision for ventilation.

**FERN (E. J.).**—If you send us four more specimens, each numbered, we will name them.

**FUNGUS (A Reader).**—Your Fungus belongs to *Agaricus gambosus* (St. George's Mushroom), a well-known edible species.

**MOSELS (Idem).**—They are found at the present season in woody places. A large dish was exhibited at the last meeting of the Royal Horticultural Society.

**PRUNING WHITE JASMINE (E. M. M.).**—The proper mode is in the first place to cut out any long, bare, old branches, and train younger shoots, not necessarily of last year's growth, but such as are well supplied with shoots, if short and stubby all the better; and failing these, young well-ripened shoots of last year should be taken to replace old, bare, worn-out branches. Thinned-out in this way, so that the shoots or branches may be about 6 inches apart, it only remains to cut-back all the side shoots to within a couple of joints, or about an inch of their base, and to shorten the young shoots trained-in or wanted for extension to firm ripe wood, cutting away the soft unripe joints. The flowers are produced on shoots of the current year, from spurs of the old wood or the well-ripened shoots of the previous year, the latter affording the finest flowers.

**FLOWER-BED ARRANGEMENT (Tulip Tree).**—We never venture to suggest either the form or planting of a bed in a garden unknown to us. All that we do is to criticise what is proposed to be done by the owner.

**VINES NOT FRUITING (D. B., Enfield).**—In the first place the Vine rods are too close to each other. Nine Vines are too many in a house 12 feet long. In a small house the rods may be closer to each other than it would be desirable to have them in a large house, but Black Hamburg and Muscat of Alexandria should not be closer than 2 feet 6 inches. The Vines have started well. Remove all the shoots from each spur except the strongest, so that the leaves may have space to develop themselves. Get healthy young wood well ripened this year, and a good crop of fruit will be certain next season.

**WALL-TRAINED PLUM TREES (Tyro).**—You do not say whether your trees are young or old. If they are young and have not yet filled their allotted space, when the young shoots have grown a foot or 18 inches you must nail them in to the wall, spreading them in a judicious manner over the required space, after having thinned them out where too much crowded. The trees should be managed in the summer in such a way that but little pruning may be required in the winter. They ought to be trained on what is called the fan method; and as the fruit is borne on spurs, the object is to pinch and prune the growths so that these may be regularly produced over the tree. Plum trees do not require to be disbudded in the same way as Peach trees, which bear on the young wood. Instructions for summer treatment will be given hereafter.

**PEARS NOT SUCCEEDING ON HEAVY SOIL (E. H. B.).**—From the contents of your letter it would appear that your garden is not drained. The soil may be too heavy, in that case some turfy loam of a lighter character may be mixed with the soil. Leaf mould would also be of service. You might also lift the trees that are cankered and replant in lighter loam, keeping the roots near the surface. The best time to lift the trees would be in November.

**SELECT PHLOXES (J. A.).**—The following are the best amongst the early-flowering section (*Phlox suffruticosa*), but these are more adapted for culture in Scotland than in the south:—John Fairbairn, Mrs. Dig, Perfection, Walter Gray, William Kirkpatrick, Elvina, John Watson, James Mitchell, Bladda, Robert Hannay, The Dean, The Queen, William Blair, and W. W. Platt. Of the late-flowering section (*P. acutata*), which are by far the best for the south, the best are *Comtesse d'Eglinton*, H. M. Simons, J. K. Lord, Princess of Wales, Princess Louise of Lorne, A. F. Barron, Amahlia, Aurora, Boréala, Chanz, Comtesse de Chambord, Edith, Lieravalli, Lothair, Lady Ingle, Le Lion, Mons. Taillard, Mons. W. Bull, Mons. Marin Saison, Mons. Liden, Mrs. Dombrain, Madame Domare, Queen of Whites, Queen Victoria, R. B. Laird, Roi des Roses, Venus, and Vierge Marie.

**VINE LEADERS SHRIVELLING (—).**—The leaders you enclosed to us are scorched from the border being excessively rich and full of humus, and the roots, probably, not supplying sap to meet the excessive demand of the leaves and shoots in a hot dry day. The only remedy will be to keep the house cooler by the admission of more air, and the floors and other surfaces moistened three or more times a day; but the best remedy would have been a poorer border containing a greater proportion of mineral substances in place of what we think there is—an excess of vegetable and animal matter. You might afford the Vines a slight shade until they reach the top of the house, and have the leaves and shoots of a firmer texture.

**THINNING PEACHES AND NECTARINES (A. Y.).**—The Peaches and Nectarines set in clusters we should at once thin to two, or at most three, in every square foot of surface, removing the smallest, and do not again thin until they are the size of walnuts, when it is likely some will fall from failing to stone; but we should then remove one-third of the smallest, and that is as many as should be removed until the stoning is completed. Then you may, if the tree is very vigorous, allow two fruit to each square foot of surface covered; but if weak in growth we should not allow more than one fruit to every square foot. If they are bushes or pyramids, take the height and width of the tree—the parts furnished with branches—and allow nine fruit to every cubic foot. The Vines will not sustain any injury, though the thermometer may fall to 45° at night; but unless you have plants that would be injured by a higher temperature, we should keep the house at 55° to 60° at night, and when in flower have it 10° higher at night. If only the usual kinds of greenhouse or cool-vinery Vines, you need not have more fire heat than sufficient to keep the temperature at 45° at night.

**ROCKWORK INFESTED WITH FUNGUS (Lady Amateur).**—The only effectual plan would be to remove the roots or stumps of the trees used in the construction. Nothing short of this will free you of the fungus. We should at once remove the plants and pot them, giving the required accommodation elsewhere, until you have had the stumps of the trees taken away and the rockwork reconstructed of stone. The fungus may be kept under to a great extent by having the stumps constantly saturated with moisture, but as long as they remain they will be likely to produce fungi.

**PROPAGATING CASE (An Inquirer).**—The best thing for you would be a heated case or frame, which you could place in the greenhouse or a room in your dwelling. The best that we know are those heated by a lamp burning colza oil, and having a hot-air chamber and water tank. For raising seeds and striking cuttings a shallow frame is most suitable.

**IVY LEAVES PATCHED (T. P.).**—The leaves you sent have the green colouring matter of their upper surface destroyed by a species of red spider (*Acarus*), which is common to Ivy and the Gooseberry; the latter this year

having the young leaves made grey from its ravages. We should cut the Ivy in at once with a pair of shears, removing and burning every leaf; after clearing the wall of any leaves and rubbish that may have accumulated, syringing the wall with soap-suds strained, employing a garden engine, so as to drive it with force against the Ivy or wall; after a day syringing forcibly with water, which, applied occasionally in dry weather during summer, will keep this pest under.

**STEPHANOTIS IN CONSERVATORY (Alpha).**—Unless your conservatory has the temperature of a stove the *Stephanotis* will not succeed, as it requires a brisk moist heat. It would probably winter in a conservatory kept dry. We have seen it finely grown in a warm vinery which from February to September had a temperature little below that of the stove, and in winter it had no more water than sufficient to keep the leaves fresh. Keep it in the stove.

**GREENHOUSE AND HOTHOUSE ARRANGEMENTS (J. S. S.).**—The arrangements of your houses as shown by the plan are the worst possible, as the greater part of the area is taken up by paths. The house, we presume, is intended to be a span. We should have it a half-span, which would give you a greater height at the back, or say 7 feet; the front may be 5 feet high, 2 feet 6 inches of brickwork, and the same of wood and glass. The back part of the roof may be about 6 feet, with 18 inches of the upper part to open the entire length, and also the whole of the front upright part of the greenhouse, the top ventilation being sufficient for the stove or hothouse. The front roof lights would need to be about 9 feet 6 inches long. We should have a front stage 3 feet wide, with a border beneath of the same width, extending the entire length of both houses. We should have the greenhouse border communicating with an outside me by having the wall arched. In this structure we would have Vines, planting them in the border inside the house, and bringing the canes through apertures cut in the shelves to the roof wires. Plant the end Vines 18 inches from the end, and the others at nearly 3 feet 6 inches apart, which will give you five Vines, which may be three Black Hamburghs, one Foster's White Seedling, and one Backland Sweetwater. These would ripen in the greenhouse with little artificial heat. Next the front border have the path 2 feet 6 inches wide, which will leave you 7 feet for back stage staging. The doors would have to correspond with the path, so that you will have but one walk through the two houses. Over the path you could have a shelf for bedding plants. The boiler you show inside the house; there is no objection to this if it must be kept down and smoke do not escape. If within the house have it beneath the stage at one end of the stove, and the pipe flue from it along the back of the stove and greenhouse; exit where you show. The pipes we should not have larger than 3-inch, and two rows all round the greenhouse would not be too many in severe weather. They may be taken nearly on the level, but with a slight rise so as to allow of the air rising to the highest point, where there should be an air pipe, and from thence back to the boiler the pipe may be on the same level as the other, and just at the boiler drop directly to the boiler return pipe. For the hothouse you will need four 3-inch pipes along the front and two at the back in addition to the greenhouse pipes, which will give heat in the hothouse when at work. The greenhouse pipes should be provided with valves on both the flow and return pipes, so as to shut-off the heat when not required. You could arrange for a propagating bed in the stove where most convenient, for which two pipes covered with 9 inches of rubble would be sufficient for bottom heat. We should not have Vines in the hothouse, but you might have Cucumbers or Melons. If you have Vines you will need an outside border, and the front sashes to take out so as to allow of the Vines being introduced and removed from the house as required. Muscat Hamburgh and Muscat of Alexandria, with Madresfield Court would suit for the hothouse. The pipes in the stove or hothouse ought to have evaporation troughs. You might grow Peaches in the greenhouse for a year or two, but after the Vines occupy the roof it will be too shaded.

**SUPPLY OF VEGETABLES—LABOUR REQUIRED (E. V.).**—To supply the number of persons you name with vegetables you would need two acres of kitchen garden, presuming servants are included. To keep the gardens and ground in order you will require three labourers, two under gardeners, and a head working gardener, along with a boy or garden woman.

**WEED AMONGST GRASS (Welby).**—The weed being of a fast creeping character will be difficult to get rid of. We know of nothing better than employing women or boys with knives to cut-up the weed by the roots, taking away the creeping parts with the hand. A good top-dressing of rich compost or well-rotted manure may be given; this, by encouraging the growth of the grass, would enable it to overpower the weeds.

**DAPHNE INDICA RUBRA BARE OF SHOOTS (H. T.).**—Cut it down after flowering, each shoot to within four or six eyes of their origin from the main stem; but you may need to cut some shorter and leave others longer, so as to produce a compact plant. Keep it rather dry at the root, but sprinkled overhead twice daily with water, and when the young shoots are an inch or two long report, loosening the sides of the ball and removing any loose soil. Pot in the same size of pot, or one that will allow of a little fresh soil all round the ball. The plant should be shaded from bright sun, and kept moist until it is again established, and it should be carefully watered, keeping it no more than moist until the roots are working freely in the fresh soil, as may be known by the growth of the plant; then water more copiously.

**GERANIUM LEAVES SPOTTED—STRYINGING (T. J. W.).**—The Geranium leaves have the appearance of being infested with thrips, for which fill the house with tobacco smoke, shutting up closely on a calm evening, and having the foliage of the plants dry but the floor wet. Water only at the root when required, watering overhead in the evening, and admitting air early in the day so as to have the leaves dry before the sun acts powerfully upon them. We approve of syringing stove and greenhouse plants in growth, with Ferns, morning and evening, but some plants are injured, therefore judgment must be exercised. The Gold and Silver Ferns, *Chelanthus*, *Notholaena*, and most kinds with hairy leaves, though requiring great moisture, are positively injured by syringing, also some kinds of fine-foliated plants. When in flower and at rest plants ought not to be syringed.

**GAS HEATING (J. Mackenzie).**—Write to Mr. Shrewsbury, ironmonger, Lower Norwood, and state size, &c., of your plant house.

**FUNGUS IN CUCUMBER FRAME (J. K.).**—The five specimens sent are all common Mushrooms.

**MAGGOTS ON PEAR TREES (Whitley Hill).**—They are the larvæ, probably, of a small moth, *Pedica angustiorina*. Dust the leaves and blossoms thoroughly with fresh white hellebore powder, and repeat it if necessary.

**GRUBS ABOUT STRAWBERRIES (S. Turner).**—The grey grubs which eat through the stems of your Strawberries are the larvæ of the crane-fly or daddy-longlegs, *Tipula oleracea*. The grubs are called by gardeners "Leather-jackets," on account of the toughness of their skins. We believe that the best course to pursue is to have the earth stirred with a knife round each plant, and the grubs are readily exposed.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### IMPROVING FARM POULTRY.

I AM glad to see that someone has taken an interest in our efforts to induce farmers and cottagers to improve their breed of poultry, and it is by making a beginning that improvements are likely to be effected. From my own experience farmers (I do not speak without exception) will not breed Brahmas, the eggs being too small and insufficient in numbers, and the birds when dead do not show that beautiful whiteness so characteristic of the Dorking, and which is so pleasant to the eye of material-familias when going to market—of course, I refer to the manner in which fowls are dressed in Yarmouth market, not the breast, &c., just stripped, but beautifully dressed and ready for the spit. French will not suit them, being, as they say, too ugly, and there is no doubt it is a difficult question to know what to provide. I do not think you could induce them to purchase cross-bred fowls. Dorkings, as a rule, are the favourites, and I know a farmer who some years ago had a fine lot of Dorkings in his farmyard; Dorkings he has still, and I have no doubt they are the same stock (I cannot speak positively on this point), judging from appearances, the cockerels being no bigger than Hamburghs, still they go to market a good colour. I tried hard to induce another farmer to purchase Dorking pullets and a Brahma cockerel. The Dorkings suited, but the yellow-legged cock would not, although I assured him that the progeny would make as good birds for table as the pure Dorking, having had them myself; and from about the 1st of October till the end of the following August I had 2603 eggs from sixteen pullets, which also included a few of them hatching and rearing chickens. I also had great difficulty in disposing of twenty Brahma-Dorking cockerels to a dealer who did not like the yellow tinge the birds possessed when alive; therefore I quite agree with Mr. Goodenough, that it would be better for farmers themselves to cross them, but I do not think to make a class for Brahma-Dorkings. I am sure any committee (I speak as one of our own) are only too glad if any gentleman would throw out hints for their own and others' benefits. I beg to inform Mr. Goodenough that the class will be open to the kingdom, and he will find in No. 680 (advertisement) that the birds shown are to be hatched in 1874, which will thus secure young birds.—W. J. NUTMAN, Great Yarmouth.

### REARING CHICKENS ARTIFICIALLY.

I READ in THE JOURNAL OF HORTICULTURE of April 9th a reply to a querist respecting three chickens with leg-weakness, and which had been brought up with others under an artificial mother, some remarks so condemnatory of the artificial system of rearing, that I venture to ask you in justice to insert the following, since not only has our name been largely associated with this matter, but the mother used by your querist is one made under our own direction. The statement runs thus:—"Artificial mothers for chickens are like baby-farming for children—mere apologies for the real thing. We wonder more are not similarly affected. We have seen thousands of chickens reared in this way years ago, and it was painfully evident with them all that something had gone wrong with them. Some carried their heads on one side, some were double-jointed, many were hump-backed, and the successful were small and attenuated though old." This is a terrible indictment; but a little attention will show that these strictures are wide of the point. The writer truly may be acquainted with no artificial mother capable of producing good results, but in this lies no argument for or against one of which he knows nothing.

We can, however, in complete refutation of the first statement made, point either to the opinions of many fanciers who have, without exception, pronounced our chicks to be at least equal in brightness, cleanness, and health to any which they have ever seen, or to the experience of those who have accepted our assistance, and whose chicks this season are being brought up upon our plan, or to our own experience. With chicks under hens we had fair success, but many deaths occurred each season, our fate being in this just similar to that universally experienced under the natural system. Feeling dissatisfaction, and thinking that some advantage would be gained could steady heat be supplied to the chicks, we gradually reached our present method. During 1872 we had one death; 1873, none; 1874, to the present time one. We ask whether any fancier existing can, with the usual method, show such a clean bill of health? And since death in a young subject is but the culmination of disease, we may suppose our chicks to rank high in condition as well as health. Does not our success in showing prove this? For example, did any of those birds, of which twenty-one came into the prize list during the last two shows at the Crystal Palace, and not one of which had the care of a hen for an hour, rejoice in "double joints" or "hump-backs?" Again, it is universally

admitted that our stock is of very large size, and not "small and attenuated;" pullets at twenty-seven weeks 8 lbs. in weight, are not so small that we need be ashamed. It is known that we had the largest cockerel at the last Falmouth Show.

In conclusion, we do not invite mere gossipers, but all who are really interested are here at all times welcome, but especially do we ask the writer's inspection of our arrangements.—F. CHESHIRE.

### INTELLIGENCE OF DUCKS.

ONE evening we had a party of friends. It was summer time, and the drawing-room glass doors which open on the lawn were set open. A lady went to the piano and commenced playing. No sooner was there a pause in the music than two Ducks, who had by some means got into the room, rose from under one of the chairs beneath which they had hidden themselves, and waddled all over the room, quacking loudly. Of course everyone laughed, when someone suggested that the music should recommence. No sooner did it do so than the Ducks crouched down, perfectly silent whilst it continued. We repeated this experiment several times, always with the same result. That it was not surprise or fear, but liking for the music, which induced this behaviour, was afterwards proved; for on after-occasions these same Ducks would, upon hearing someone touch the piano, leave the field and come across to the drawing-room open doors, and even into the anteroom to listen.

Once, very late at night, just as we were passing through the hall to go up-stairs, we heard a great noise of Ducks. It so happened that my husband was carrying a large paraffin lamp, and no sooner did the strong light appear in the hall than the noise very much increased. I opened a door which led into the garden, and no sooner had I done so than a Duck positively rushed into the hall close to my feet, quacking most vociferously, her eyes glaring, and she beating her wings and moving her head about in great agitation.

My husband turned out, and went into the garden, carrying the large lamp, and immediately the Duck followed him. Outside she was joined by the rest of the Ducks, young and old; but the old drake was nowhere to be found.

The next morning he was discovered amongst the bushes, alive, but somewhat injured, having evidently been caught by a dog, who had dropped him upon hearing the alarm and seeing the light approaching.—E. M. M. (in *Land and Water*.)

### CANARY TROUBLES.

HERE'S a pretty state of things! Read! "Those I am interested in eat their eggs, fight each other off their nests, and, although there are many eggs laid, there are no young ones produced." The whole establishment seems to be demoralised. As for Canaries eating their eggs, there is no cure for it. It used to be the custom to blow an egg and fill it with cayenne pepper, under the idea that a taste would leave such an unpleasant impression as would check such highly improper proceedings. But now we find they are so fond of it that if they thought their eggs contained such a delicacy, the chances are they would eat them still more greedily. So that's no use, and I don't know what is. But this fighting has a suspicious appearance. How many hens are there together, I wonder? And I wonder also whether it be not possible they are all hens, a lot of old maids fighting and scratching among themselves. All Canaries that sing are not cocks. I once had a Cinnamon bird which would let down its wings and sing the "prond song" over hens most lustily; but it laid eggs. I should advise you to get another cock. Assuming you have several birds in one cage or in an aviary, it is evident the cock bird you have is not master of his own house. The new comer will soon explain matters satisfactorily. If you have many hens in one place supply plenty of nest boxes, for, when they are open to choose, two or three tenants often take a fancy to the same house, and hence arises a scene which goes far to prove that Dr. Watts was not in the fancy. This propensity to live in tenemented houses is one of the great drawbacks to the aviary system of breeding birds. It always ends in a "row on the stairs."

Now read again! "I am troubled with the parasite, that pest of the Canary fancy, and I find the old proverb almost verified, that 'where there is one there is a thousand.' They literally swarm." My first impression on reading this was one of deep sympathy for the sufferer. Fancy any person literally swarming with the things! I was going to prescribe a bath, a very hot bath, a general disinfecting of the person, and all articles of clothing and bedding to be destroyed. But I read farther. "I have oftentimes felt inclined to dust the baskets and nests in my breeding-cages with black sulphur, but have been restrained through fear lest it should be injurious either to the birds themselves or to the eggs." It is not so bad as I thought. First of all burn your nest-baskets, and never use such things again. You could not possibly offer a greater inducement to these pests to take up their abode with you. Baskets are a thing of a bygone

day. The mention of them implies that you use the ordinary London breeding-cage, with the two closets at one end and holes cut for a sort of hand-basin-kind arrangement of nest. When the parasites get into these cages it is next to impossible to exterminate them, as these little closets are not easy of access. I would advise you to scrape the cage if it is whitewashed, and then thoroughly scald it. If the washhouse copper is large enough, get it under weigh, and immerse the cage in boiling water; then scrape and paint it thoroughly with a solution of bi-chloride of mercury. Any chemist will mix you a bottle. Get it well into the cracks, and when dry whitewash the inside of the cage and varnish the outside. Replace the basket-nest with one made of tin, with a perforated zinc bottom, and lined with thick felt, which can be stitched in. Supply no building material. Keep a sharp look-out for any stragglers which may still be on the bodies of the birds. During the day they will get under the ledge of the nest, at the end of the perches, on the top and bottom of the door where it all but touches the frame, between the back of the cage and the wall, into any sly corner, from which they must be dislodged and submitted to gentle pressure. It is manifest that the less ornamental work there is about a cage the better, as it only affords a hiding-place for one of the greatest nuisances the Canary breeder has to put up with. Should you at any time observe a white powdery appearance about a crack or joint, just pass the varnish brush over the place. The tenants will at once quit their den and be taken on the "catch-'em-alive-oh!" principle.—W. A. BLAISTON.

HEREFORD POULTRY SHOW, 1874.—A Poultry Show will be held in connection with the Herefordshire Agricultural Society's Show on the 11th and 12th of August. Entries to close on the 21st of July.

### MR. PETTIGREW ON THE QUEEN BEE.

IN an article in last number on the queen bee by Mr. Pettigrew he prefaces his subject thus—"What a volume of interest and marvel we should have in a full and accurate record of the birth, character, and career of a queen bee! But who can write it?" and forthwith he proceeds to state "a few things known about queens" for the benefit of "young beginners and uninformed people."

So far so good; but unfortunately some of these few things said to be known about queens, stated by Mr. Pettigrew in that article, are so erroneous and imaginary, and withal so contrary to the natural history of the bee as understood and known by many of us after not a little study and observation, that Mr. Pettigrew will excuse my pointing them out to him for his reconsideration, and also for the purpose of eliciting from him the means by which he came to such conclusions so boldly enunciated.

But first let me say that I have perused with pleasure several of Mr. Pettigrew's articles on the practical work of the apiary; and though not coinciding with many of his plans, views, and recommendations, some of which I have before adverted to, yet they unmistakably show that the writer is not only a great enthusiast in bee-keeping, but an experienced and intelligent practical apiarian. Judging, however, from the more recent articles in the Journal, it is to be feared that as Mr. Pettigrew quits the practical part of the apiary, his *terra cognita*, the management of the bee, and enters into the higher and more abstruse subject of its natural history, he will be found steering his vessel (as is already the case) into unknown seas, and will be in danger of foundering even midway his projected voyage, and bringing himself and some of his more inexperienced crew to grief. To prevent, if possible, such a catastrophe, is the object of this article.

Here are a few of Mr. Pettigrew's assertions. "One of the most wonderful things seen in the economy of a bee hive is the fact that a queen bee is reared to perfection in fourteen days, whereas a common working bee produced from the same kind of eggs is twenty-one days in the cell."

Now, in regard to the queen bee, it is not in fourteen days she arrives at maturity, but on the sixteenth day; and the worker is not twenty-one days in the cell, but it comes forth a perfect insect on the twentieth day.

Again: Mr. Pettigrew says, "If a hive lose its queen, the bees of that hive take eggs set in worker cells and place them in royal cells, and then convert them into perfect princesses," &c.

Now, when a hive loses or is deprived of its queen at a time when no preparation is made for such a contingency, the bees do not transfer eggs from worker cells to royal cells, as is alleged by Mr. Pettigrew. They fix upon a worm generally not more than three days old, demolish the three contiguous cells, and raise around it horizontally a cylindrical enclosure, which in lengthening they change into a vertical position, working downwards till it presents a stalactite appearance; and thus the royal cell is completed and sealed, and the converted larva in due time comes forth a royal princess.

Again: Mr. Pettigrew says, "Where two swarms are united

the bees doubtless in most instances destroy one of them to prevent a battle." In such circumstances I have to point out that the queens are never allowed to do battle, and one of the queens is always destroyed by the bees.

Again, Mr. Pettigrew says, "But really does she [the queen] lay and set her eggs in the cells? Most writers think and assert that she is not assisted by the bees in this work. We differ in opinion from almost everybody else on this point, and believe that the bees do assist in the distribution and setting of the eggs laid by the queen, for she frequently lays two or three eggs in one cell, and the supernumeraries are removed by the bees, and we think set in unoccupied cells. Besides, a queen has not power to retain her eggs, they come so fast."

These opinions and beliefs, let me say, have no foundation in fact. The queen requires no such aid as is here suggested by Mr. Pettigrew. I have often watched and carefully noted the movements of the queen when engaged in the important and interesting duty of ovipositing. In a normally-peopled hive, and with adequate space, she does her laborious work with instinctive accuracy; and when on examination she finds an egg already in the cell she passes on to another, and very seldom indeed any irregularity or mistake occurs. In limited space and with limited workers her instinct no doubt is affected prejudicially, and abnormal oviposition is the result; but in such cases we cannot wonder to find more than one egg in a cell, and to see her, under the prompting of Nature's laws, involuntarily as it were, drop her eggs on the combs which she is traversing. The bees may destroy or eat the supernumerary eggs, but they certainly never transfer them to other cells.

Yet again Mr. Pettigrew says, "Who has not seen and admired in a unicomb hive the vigilant attention of the bees attending the queen as she moves about the hive? Three or four of them have their heads towards her abdomen, apparently watching for and catching the eggs as they drop from her. We therefore come to the belief that the bees help in the distribution of the eggs; and we all know that bees take eggs from worker cells and set them in royal cells when they wish to raise queens."

In regard to this, I can only say for myself that I have no such knowledge as is here attributed to all apiarians, and regard the whole matter as a complete chimera.

Once more, Mr. Pettigrew says in reference to the fertility of the queen, "Some trustworthy experiments have indicated four thousand and six thousand eggs per day each queen . . . . What prodigious fertility! . . . . At what time and how long does she sleep? Who says she sleeps at all? How can she find time to sleep if she lay two to four thousand eggs in cells in twenty-four hours?"

Now in regard to the fertility of the queen bee, it is certainly enormous; but it would be satisfactory to be told the trustworthy experiments which prove that she does lay such a number of eggs as stated. Six thousand eggs per day represent upwards of half a million in the three summer months, 250 per hour, and about four each minute, and that without making any allowance for rest or repose. Verily the question is very pertinently put, "Does the queen ever sleep?" Whether she sleeps or no may be difficult to prove; but one thing certain is that she rests, and that very frequently, and can, I have no doubt, enjoy a nap like most other creatures.

For such statements, opinions, and beliefs to which I have adverted I am at a loss to account. How they could be put forward or entertained by any experienced or advanced apiarian is to me a mystery; for had it not been that Mr. Pettigrew speaks of his having a unicomb hive I should have ascribed such absurd vagaries to the lack of those facilities for observation and study of the internal economy of the hive which unicomb, Huber, and frame hives supply.—J. LOWE.

## DRIVING BEES, AND ARTIFICIAL SWARMING.

FROM the many letters received seeking information on those points, one is led to believe that the number of apiarians is ever increasing, and that many of these letters come from beginners. It has been my happiness to meet people who became expert and advanced bee-keepers in three months, and it has been my lot to meet many others who are ever seeking but never able to learn the art of managing bees. These latter live in the maze of haphazard and peradventure. How does this happen? They will not put their hands to the work and master it. A man does not become an artist unless he handles a brush and palette; and those who learn carpentry, masonry, or gardening have to clutch the tools used in the trade. "Union is strength" only when embodied in action; and "knowledge is power" when called into play. "I can't do it," never did anything; "I'll try," has done wonders; but "I will do it," has performed prodigies. From many parties all over England and Scotland come letters, stating that the writers have succeeded well and beyond their expectations in swarming bees artificially on their first attempt to follow the instructions we have given. Every bee-keeper should know that a bit of smoking corduroy

is the talisman in the work of managing and mastering bees. When a hive is to be examined, or swarmed, or honey taken from it, let the smoke be used first and plentifully. Holding it close to the door of the hive and blowing the smoke into it, the bees run to escape from its power. How much smoke is necessary for a large hive full of bees? Six or eight full inspirations blown back on the smoke, forcing it into the hive, will master the most irritable bees. This smoke does no harm to the health of the bees, and does not hinder them from work many minutes.

The other week the readers of this Journal were told that hives become ready for swarming in ordinary seasons and circumstances in about three weeks after the bees cover their combs and fill the cells with eggs and brood. The moisture of hives, or, in other words, the sweat and breath of bees, at this time is great, and gradually becomes greater till the time of swarming. As this moisture passes out of the hives part of it is condensed on the flight-boards at nights, and may be seen in considerable quantity every morning. As the internal heat increases, the moisture of the hives is, as it were, driven farther out, or rather is dried-up in the doorway and on the flight-board 2 or 3 inches outside. By noticing the space dried anyone may know when a hive is approaching the swarming point. By using the smoke from corduroy, and turning-up a hive, we ascertain whether it is ripe enough for being swarmed artificially. If queens are set in royal cells, we know that, weather permitting, it is on the eve of swarming naturally. If the bees do not run-up amongst the combs on being fumigated by the corduroy, but are found in heaps on the floor-board, or like a rope round the outer edges of the board inside, the hive is ready to be swarmed artificially. Such examinations should be made when the bees are all at home. If the bees hang in a cluster outside the door we know the hive is ripe for swarming and need not be examined at all, but it should be known that large hives seldom cluster outside before swarming.

Now we come to describe our mode of artificial swarming. The hive to contain the swarm is prepared with cross-sticks and guide-combs. Another hive, quite empty, is necessary; also a tablecloth or piece of calico. The hive to be swarmed is smoked, turned-up, and placed on its crown. The empty hive is placed on it, mouth to mouth, and the tablecloth is rolled round both, over the junction, to keep in the bees. The hive prepared to receive the swarm is placed on the board, to cover and keep together all the bees left there. At once we commence to drum on the full hive, and continue to drum for about four minutes, causing a swarm to run-up into the empty hive. Then we unroll the tablecloth, take off the swarm, and spread the cloth over the combs of the old hive. As soon as we have seen the queen amongst the bees of the swarm, we cast all into the hive on the board, put the old hive on another board, and place it a yard or two from the spot on which it stood before. All this is frequently done in the space of six or seven minutes, and sometimes we fail to notice the queen for a few minutes. How easy, natural, and simple is this mode of artificial swarming! As the queens go with the swarms in nineteen cases out of twenty, it is not absolutely necessary to search for or see the queens amongst the bees. If a queen is not with a swarm, but still in the old hive, the bees will return in a short time, and nothing has been lost save the five minutes spent in the effort. A second effort may be more successful. As most of our hives are at a distance from home in the swarming season, we see that the queens are with the swarms before we place them as described and leave them. What a boon to poor bee-keepers is this easy mode of artificial swarming! No time lost in waiting and watching for swarms. About seventy years ago my father, who was a common labouring man, practised it, and, I think, invented it about that time.

There are other ways of swarming artificially, but none of them appears half so natural as this, and sure enough none can be more successfully carried into practice.

The bar-frame hive is managed differently. So many bars and bees are taken from the hive and placed in another. The queen may either remain in the old hive or go to the new one. As there are eggs in the combs of both hives, the bees without the queen have it in their power to raise another. The combs, brood, and bees of the old hive are divided into two hives, causing a split or rupture—quite the reverse of an imitation of Nature. Still, it is practised, and answers to a certain extent. I think it would answer better, even in the case of bar-framers, to divide the bees and give the colonies the queens, as I practise and recommend. The swarms with the queens rapidly fill their hives with combs, the old ones are rapidly strengthened by the brood becoming population. As soon as all is hatched the honey could be taken from the hives, and the bars be returned to be filled with fresh combs and honey. Another consideration is, in dividing the combs and leaving each hive half full, there is a great likelihood of the bees without the queen making a superabundance of drone comb, for bees invariably build a prodigious amount of drone comb in empty space when they are rearing queens.

In swarming artificially beginners have a difficulty in knowing how many bees to take as a swarm, and how many to leave. Nature must be imitated in this. By lifting a hive off the board as soon as it has swarmed naturally, we find sufficient bees left to cover the combs thinly and to hatch the brood. In artificial swarming our aim is, leave enough to lightly cover the combs. When we have taken too many we put a few back, and when too many are left we drive-up a few more and cast them to the swarm. Many people visit us in summer to witness artificial swarming, all of whom are astonished at the ease, simplicity, and success with which it is done. It is just about as easily and speedily done as shaking a natural swarm from a branch of a tree into a hive. Driving bees out of a hive is done by drumming about twenty minutes, causing all the bees to go up. Four or five minutes' drumming is enough for a swarm.—A. PETTIGREW.

### OUR LETTER BOX.

**BOOKS (T. H.).**—The work you mention could be obtained for you by any bookseller.

**BARTON POULTRY SHOW (W. Waters).**—We know nothing of the Show; as no money is forthcoming see the Secretary in the County Court.

**FLOOR OF POULTRY HOUSE—FOOD—HATCHING BANTAMS (Rob Roy).**—You do not want a better floor than the bare ground. If it is loose put down some chalk, add some clay if you will, and have it rammed down hard. You may keep the two lots of chickens in the space you name if you provide them all they require. The smaller the space the more you must provide artificially. Above all, they want grass and fresh earth. Worms are good food when confined to the few they find in a turf out for grass and with 2 inches deep of mould, but given in quantities they are not good food. It is always exposed the later Bantams are hatched the smaller they will be, but we are not sure the diminutive size is not dearly purchased by weaker constitutions than if they were hatched earlier.

**POULTRY-KEEPING (E. D.).**—We know no better place to buy food for poultry than Mark Lane. If you have room to store it, and can buy two or three quarters of corn, you will find it a great economy when compared with small hand-to-mouth purchases. If you can buy a load of five quarters you will buy it still cheaper. The larger the run the less should be the cost of keep, but we cannot give you any scheme or any dietary that will keep birds in health on 1½d. per week. We have tried and tested everything; and where there is a good run of grass at this time of year we expect to keep them in startling condition on 2d. per week, sometimes for a little less. They will cost more in winter. We are against any but natural food, and although we keep many hundreds of fowls all the year round we use no other. Our menu is to give barleymeal or ground oats slaked in the morning; whole corn, maize at mid-day, and barleymeal again in the evening. Kitchen and table scraps are valuable help, but when they are given the other food should be withheld. We have no doubt your birds are overfed. We advise you to diminish the quantity, and to give only as the fowls are eager for it. As soon as food lies about there is waste. The waste makes the difference between profit and loss. Give your young chickens some cooked meat chopped fine, bread and milk, a small quantity of chopped egg, and bread or biscuit soaked in strong beer. Keep the hens under the rips, and put them where the chickens will have all the benefit of the glorious sunshine.

**HENS' RUMPS FEATHERLESS (R. R. P.).**—It is a common occurrence at this time of year. Remove the coobs.

**COCK SNEEZING (M. A. F.).**—Your Spanish cock is suffering from cold. We expect, before this is seen by you, the change in the weather will have cured him; if not, give him a dose of castor oil (a table-spoonful) twice at one day's interval, and feed on bread and ale.

**INTRUDING HAMBURGH (Game Cock).**—If the Sultan cock has been with the hen always, we think you may safely set the eggs, especially if it is five weeks since the Hamburg was there.

**PIGEON FEEDING (A. H. W.).**—Your food is all good, but the feeding birds should neither have maize nor barley. Both are bad for the young, and we believe are the cause of mortality.

**CRÈVE-CŒUR'S DOUBLE-YOLKED EGG (J. R. Y.).**—We are always obliged by such communications. We have had very large eggs from Crève-Cœur, but not equal to your pullet's, 4½ ozs. We have known Spanish eggs weigh 4 ozs. each single-yolked. For many years it was supposed that a double-yolked egg was a monstrosity, and needless except for an omelette; but we have in our possession two chickens attached to two yolks and perfectly formed.

**EGGS BROKEN INTERNALLY (Civis).**—We are going against the prevailing notion as regards poultry when we say all the extra appliances as regards feeding are mistakes. They cause only trouble and disappointment. Many of the new diseases we have to encounter may be attributed to them. We keep some hundreds of hens and pullets, we have no such experience as yours. It has long been known that an egg broken internally is the cause of death. The membrane forming the passage is of a most delicate nature; the broken shell lacerates it, and causes incurable inflammation. Buckwheat is largely used abroad, but principally for fattening purposes. All your pullets have died from being too fat. They cannot lay their eggs; they strain, and the rupture which takes place in consequence causes the suffusion of yolk. If they did not die they would become hen-cocks. As you say they have a good run and plenty of lime and such-like, they have nearly all that is necessary to produce good eggs. All you have to do is to give them food. Follow Nature as nearly as you can. Give them early in the morning barleymeal or ground oats slaked with water; at mid-day either scraps or maize, not both; evening, barleymeal or ground oats the same as in the morning. Eschew all else. You will lose no more fowls by breaking eggs internally.

**WORMS IN THE WINDPIPES OF CHICKENS (S. C. O.).**—The worms are known to entomologists as the *Fasciola trachealis*. It causes the disease called gapes. As you observe, if the worm is extracted the chicken recovers. To prevent its occurrence, nutritious food, green food, and a piece of camphor in the water the chickens drink are successful.

**RABBITS FOR TABLE PURPOSES (T. M. N.).**—The true Andalusian Rabbit is unknown in this country. The Patagonian is the better for table purposes of the two you name, but if you can procure the Flemish Giant it is decidedly better than any, being the largest breed we have. It is almost unknown as

yet, but would well repay importation. Belgian Hares can be obtained for about 10s. each. Patagonians are dearer—about 30s. to 40s. per pair. All the breeds above mentioned, and also Rabbit-breeding for table purposes, will shortly be treated on in these columns.

**FEEDING YOUNG CANARIES FOR COLOUR (Dublin).**—Do not give the cayenne food to the young ones while in the nest, but when they are about seven or eight weeks old, and before the young feathers begin to grow. Continue it while they are in the moult—i.e., while the blood is in circulation in the feather.—W. A. B.

**WEAK BEES IN SMALL HIVE (W. E. M.).**—The 13-inch hive which has been given to you is evidently so weak that we think the small number of bees in it hardly worth the trouble of uniting to the stronger and larger hives. We think your better way will be to keep them separate, and if the small hive become strong in June or July, to drive all the bees out of it then and take the honey. The bees, if kindly treated, would make combs enough in a modern hive to form a stock for another year. But if you decide on a union now, drive or shake the few bees into an empty hive, or cut the combs piecemeal from the bees, then feed the hive, to receive them, with some matted syrup (sugar and water flavoured with essence of peppermint), and cast them into this hive.

**BALD SPOTS ON HORSE'S LIP (Beta).**—As there is no eruption or irritation we cannot assign a reason or cure any more than why bald places occur on all animals.

### METEOROLOGICAL OBSERVATIONS.

CAMPDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.				Rain.
	Barom. at Sea level.	Hygrom- eter.	Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem- perature.	Radiation Temperature	In sun.	On grass	
1874.		Dry. Wet.			Max. Min.	deg. deg.	deg. deg.	deg. deg.	In.
April.									0.10.
We. 15	30.073	45.2 44.0	N.E.	47.0	61.3 44.2	102.4	103.4	40.1	—
Th. 16	29.994	50.0 48.3	N.	47.7	59.8 42.6	110.2	118.2	38.6	0.061
Fri. 17	30.017	51.7 45.0	W.	47.0	67.0 48.1	113.3	117.3	47.4	—
Sat. 18	30.007	52.9 51.4	W.	48.8	66.6 45.2	107.9	110.9	41.3	—
Sun. 19	30.124	69.5 69.2	W.	50.3	68.5 48.7	106.9	116.9	38.8	—
Mo. 20	30.097	61.2 49.8	S.E.	50.8	73.2 49.7	121.6	121.6	36.1	—
Tu. 21	29.989	61.2 54.6	S.E.	51.5					0.074
Means	30.043	53.5 49.5		48.9	65.4 43.9	110.1	110.1	40.7	

### REMARKS.

15th.—Fair but dull in the morning; the after part of the day very fine.  
16th.—Rather dull morning; fine day, at times very bright, and the wind less strong and cold than lately.  
17th.—Somewhat stormy morning; fine in the middle of the day, but cloudy and cold afterwards.  
18th.—Showery morning; afternoon and evening fine, except a slight shower at 5.30 P.M.  
19th.—Very fine morning; rather less bright after 4 P.M., though still fine, but not so warm.  
20th.—Morning rather hazy; a very fine day, and much warmer.  
21st.—A most beautiful day, but rather too warm for the season; the temperature in the shade rising to 78°; a very unusual thing for April.  
The warmth of the last few days has raised the mean temperature about 6° above that of last week, except at 1 foot under ground, which, of course, is less sensitive to changes whether of heat or cold, but the warmth of the 20th and 21st is telling rapidly even there. On the 21st the temperature of garden mould 1 inch deep reached 88°.—G. J. SYMONS.

### COVENT GARDEN MARKET.—APRIL 22.

A GOOD supply, with some additional demand, has been the rule during the last few days. A few Peaches have made their appearance, for which as yet a price can hardly be quoted.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	4 sieves	2 0 to 3 0	Nectarines.....	1 lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0	Oranges.....	doz.	0 0 0
Cherries.....	1 lb.	0 0 0	Peaches.....	100	4 0 16 0
Chestnuts.....	bushel	10 0 0	Pears, kitchen.....	doz.	0 0 0
Currants.....	4 sieves	0 0 0	Pears, dessert.....	doz.	2 0 0
Black.....	do.	0 0 0	Pine Apples.....	doz.	6 0 8 0
Figs.....	doz.	0 0 0	Plums.....	4 sieves	0 0 0
Filberts.....	lb.	1 0 1 6	Quinces.....	doz.	0 0 0
Gobs.....	lb.	1 0 1 6	Raspberries.....	lb.	0 0 0
Gonsecberries.....	quart	0 0 0	Strawberries.....	100	0 6 1 0
Grapes, hothouse.....	lb.	4 0 15 0	Walnuts.....	bushel	10 0 10 0
Lemons.....	100	4 0 12 0	ditto.....	100	2 0 2 0
Melons.....	each	0 0 0			

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	5 0 to 6 0	Mushrooms.....	potl.	1 0 to 2 0
Asparagus.....	100	4 0 10 0	Mustard & Cress.....	punnet	2 0 6 0
French.....	13	0 20 0	Onions.....	bushel	4 0 7 0
Beans, Kidney.....	100	2 0 0 0	Pickling.....	quart	0 0 0
Beet, Red.....	doz	1 0 3 0	Parsley per doz. bunches	4	0 0 0
Broccoli.....	bundle	0 3 1 8	Paranips.....	doz	0 0 1 0
Cabbages.....	doz.	1 0 1 6	Pears.....	quart	10 0 0 0
Capsicums.....	100	0 0 0	Potatoes.....	bushel	8 6 4 6
Carrots.....	bunch	0 0 0	Kidney.....	do.	0 0 0
Cardiflowers.....	dos.	3 0 6 0	Round.....	do.	0 0 0
Celery.....	bundle	1 6 2 0	Radishes.....	6 oz. bunches	1 0 1 6
Coleworts.....	doz. bunches	2 6 4 0	Rhubarb.....	bundle	0 9 1 6
Cucumbers.....	each	1 0 2 0	Salsafy.....	bundle	1 0 2 0
pickling.....	doz.	0 0 0	Savoy.....	doz.	1 0 0 0
Endive.....	doz.	2 0 0 0	Scorzon.....	bundle	1 0 0 0
Herbs.....	bunch	0 0 0	Sea-kale.....	basket	1 0 2 8
Fennel.....	bunch	0 0 0	Shallots.....	lb.	0 3 0 0
Garlic.....	doz.	0 0 0	Spinnage.....	bushel	2 0 8 0
Herbs.....	bunch	0 0 0	Tomatoes.....	doz.	0 0 0
Horsedish.....	bundle	8 0 4 0	Turnips.....	bunch	0 3 0 0
Leeks.....	bunch	0 0 0	Vegetable Marrows.....	doz.	0 0 0
Lettuce.....	doz.	1 0 4 0			

WEEKLY CALENDAR.

Day of Month.	Day of Week.	APRIL 30—MAY 6, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
30	TH	Meeting of Royal Society, 8.30 P.M.	61.0	59.1	50.1	17	36 41	19 47	19 6	13 4	14	2 55	120
1	F	PRINCE ARTHUR BORN, 1850.	61.4	59.2	50.3	16	34 4	20 7	31 7	24 4	0	3 3	121
2	S		62.7	59.1	50.9	15	32 4	23 7	46 8	39 4	16	3 10	122
3	SUN	4 SUNDAY AFTER EASTER.	62.4	42.2	52.3	20	30 4	23 7	2 10	58 4	17	3 17	123
4	M	Meeting of Entomological Society, 7 P.M.	62.4	38.5	50.5	16	28 4	25 7	14 11	23 5	18	3 23	124
5	Tu	Meeting of Zoological Society, 8.30 P.M.	62.9	39 0	50.9	22	26 4	27 7	morn.	0 6	19	3 29	125
6	W	Meeting of Society of Arts, 8 P.M.	62.3	38.5	50.4	16	25 4	28 7	17 0	51 6	20	3 34	126

From observations taken near London during forty-three years, the average day temperature of the week is 62.1°; and its night temperature 59.3°. The greatest heat was 81°, on the 6th, 1852; and the lowest cold 20° on the 6th, 1855. The greatest fall of rain was 1.26 inch.

RED SPIDER.



HAT a delightful proceeding fruit and vegetable forcing would be if it were not for the red spider; but how often are our hopes blighted by the untimely appearance of these little insects. It is all very well to write about syringing them, and applying sulphur, but I have never yet met with unadulterated water that would kill them unless it was applied hot, nor with sulphur that would check them in

the least unless it was converted into sulphureous gas, and even of this they will bear more with impunity than tender plants will. I have long ago given up the useless practice of painting hot-water pipes with sulphur, and yet I see people year after year doing it in good faith, and advising others to do it; for no better reason, I suppose, than that their fathers did it before them. But some one may say, "I paint my pipes, and I have no difficulty with red spider." Possibly, but it is not because you paint the pipes with sulphur, but because your general treatment is good. If you carefully place some of the insects on the pipes which are coated with sulphur they will probably find their way on to the plants again but little the worse for their journey; also, if you give them half an hour's bath, without removing them from the leaf on which they are quartered, in water that is neither below 35° nor above 180°, you will find them rather refreshed than otherwise.

Having said that neither water nor sulphur will kill these insects I shall be expected to say what will do so. I am extremely sorry to say I can do nothing of the sort. There are lots of things sold for killing them, any of which will do it if you can only get at them; but in practice you can only get at some of them, and the utmost you can do when they once get a footing is merely to keep them in check till the growing season is over. In winter, when vegetation is dormant and insect life comparatively so, it is an easy matter to get rid of them altogether by an unsparing use of soft soap and hot water. Once clear of them resolve to be more liberal to your plants, stinting them of neither root-room nor water. Red spider does not first make its appearance on vigorous-growing plants; it has a great dislike to ammonia and to plants which have a plentiful supply of that article. It comes first on those which are half-starved—plants which naturally grow vigorously, but which are prevented doing so by a too-limited supply of soil and water, especially if kept in a hot dry atmosphere.

Strawberries and Dwarf Kidney Beans are the agents by which, perhaps, the greater part of the red spider is distributed in forcing houses in the spring; but, providing other plants are free from it, it is an easy matter to grow both of these without it. Beans are generally forced in pots 9 or 10 inches in diameter, two or three plants in a pot, the pots being half or three-parts filled with soil when the Beans are sown, and more soil added when

the plants have made some growth. Now, if the soil is examined when the Beans are done with and thrown out, it will be seen that the upper part of the soil has not been made much use of. Dwarf Kidney Beans do not emit roots from the stem, however high they may be covered with earth, and therefore only the soil in which they were sown has been of much use to them—probably averaging about a pint of soil to each plant—and this has most likely been dry two or three times a-day, and sometimes remained so for hours together. Here, then, is a tempting bait for the red spider, and if there is none in the house it will somehow put in an appearance before long. The greater part of the soil should be placed below the seed instead of above it, and it will be found that more Beans of better quality will be obtained from one plant in a pot than from three. I use and prefer boxes about 3 feet long, 1 foot wide, and 1 foot deep, sowing five or six Beans in a box. The soil does not dry so fast in wood as it does in pots. Sir Joseph Paxton is the variety used; it comes quickly into bearing, and is quickly over before red spider has any chance to establish itself. It is necessary, however, to look sharply after successions with this variety, sowing a second lot as soon as the first appears above ground. The boxes are thoroughly scalded each time as soon as emptied.

Strawberries generally get their stock of red spider in the summer. They are layered in small pots, and get dry more than once during a hot day in June and July, and are, perhaps, supplied with water that is not nearly so warm as the soil in which they are growing. They also receive another severe check when severed from the parent plant, which they do not get over for several days. Red spider is not at all backward in taking possession at such times, and by the autumn there is generally sufficient on the plants to breed a healthy stock from in the spring.

I have tried several modes of preparing Strawberry plants for forcing, and that which I have settled down to, and which I practised exclusively last summer, is to layer them into the fruiting pots (6 or 7-inch), and leave them attached to the parent plants till the connecting runners show signs of decay. They then receive no check at all, and the consequence is that I have not a single red spider on my Strawberries; and although the autumn here was very unfavourable—it rained almost constantly throughout August and part of September—my plants are as good as I ever had them, and the fruit is pronounced better.

In preparing the pots for layering, which can be done by labourers on wet days in May or the beginning of June, some strong clayey loam mixed with a little of the strongest manure that can be obtained is used to three-parts fill them, ramming it in as hard as is possible without breaking the pots; the remaining space to within half an inch of the rim is filled with soil that is a little lighter, and without manure. The pots can then be stacked away one above another till they are wanted. The soil, of course, should be sufficiently dry that it will not bind together. I calculate I gain quite three weeks

in the ripening of the plants by this method, while the labour saved in watering and potting is something enormous.—  
WILLIAM TAYLOR.

### ANEMONES FROM SEED.

I CAN confirm what is said on page 296 on this simple and beautiful garden plant. I have grown it from seed extensively, sown principally in vacant spots in the front of shrubby borders. It there showed to particular advantage, and was in its season a dazzling sea of colour, and I am bound to say that I never saw a mass of flowers give greater pleasure or extort more real admiration than did these glowing masses of dazzling, brilliant Anemones. It must, however, be said that the soil was particularly well suited to them, being a rather strong yellow loam. I have since tried the same plan in a hotter lighter soil, and could not approach the old success.

I always preferred saving last year's seed and sowing in April, and was then certain of a fine display in the April following, much better than was secured by waiting until the seed was ripe and sowing then. The moisture of the ground in April is generally much more suitable for the free germination of the seed than in June.

My practice was to sow in shallow drills 4 or 5 inches apart, and when the seedlings were sufficiently high, to thin-out exactly after the manner of Parsley—that is, letting the plants stand just decidedly clear of each other. The plants came up year by year, and with a little care show no signs of deterioration. The little care was this: On clearing off the matured growth about July, to sprinkle over a covering of soil for the sake of neatness, and then in the spring another slight sprinkling of salt and guano—about an ounce per square yard. If the weather was dry after commencing growth, a few soakings of water were given, and the end was a display of bloom more than worth the little care bestowed.

For a cheering display of gardens and grounds in spring, either under the partial shade of trees or in full sun, few, if any, plants can impart the same glowing brightness so easily, cheaply, certainly, and lastingly as the single Anemone raised from seed—that is, if the ground is in itself naturally suitable. A locality where Buttercups preponderate over Daisies in the meadows will grow Anemones to perfection in the gardens adjoining. They are calculated to brighten-up many an otherwise dull spot in the cottager's plot, merchant's enclosure, or nobleman's demesne. Indeed, they are worthy of any place worthy to receive them. This will be readily acknowledged when once seen in their best garb—not grown in long thin lines, but in broad irregular clumps and bold masses, with evergreens for a background. Clumps of seedlings will transplant well in a growing state if taken up with balls of earth to their roots in showery weather. There is no better time for sowing than the present, but the seed should not be more than one year old. At this age it will germinate as freely as when sown on the day it is gathered.—W.

### A STRIKING EFFECT OF CLEMATIS MIXED WITH GERANIUMS.

MUCH has been written of these two popular flowers individually; allow me to draw attention to the exquisitely beautiful appearance they present when grown together on pillars in conservatories and similar positions. Geraniums seem just now to be on the shady side of popularity, while the lovely hues of the Clematis are most deservedly rising in public favour. The only regret one feels on seeing such a mass of Clematises as shown at the last meeting at Kensington, is the want of some shade of scarlet. I do not despair of yet seeing it; indeed, I noticed one small plant in the collection referred to which was evidently breaking into that colour. We have only now to add as a companion to the Clematis some subject with scarlet flowers to make a show of the most pleasing character.

As a rule I do not advocate growing more than one plant to a pillar, as both are generally spoiled. In this case, however, after trying it, I have found it a positive advantage to have both—each lending a charm to the other, and combining to produce a more effective picture than either separately.

Supposing it to be the intention to grow the Clematis on pillars in the border, if planted at once in the majority of cases we find that after a year or two it becomes naked at the bottom. This is the natural course of things. We can certainly manage to bring down a shoot or two afterwards, but not enough to fill up and make the mass one would desire;

there, then, is the Geranium's place—a fine strong-growing variety left growing in the pot. We thus have the base of the pillar, which would otherwise be naked, well furnished at once, and we have only to study the different colours of both subjects to secure any combination that may be desired. What can be more pleasing than a scarlet Geranium with a few carelessly-hanging branches of a white Clematis intermingled, or a white Geranium with a lavender or blue-shaded Clematis? I have supposed the Clematis to be planted out; but if well supplied with water in the growing season, and potted in a rich mellow loam in a deep pot, with good drainage, its culture will be simple enough. I think, however, that red spider and green fly are more troublesome to pot plants than to those which are planted out, and to some extent the former do not continue to bloom so freely throughout the season, but when so grown there is the advantage that it can be placed wherever it may be desirable, and in positions where it is impossible to plant-out. Another advantage is, the plants may be stored during the winter in any out-of-the-way place free from extremes of wet, drought, and hard frost.

In storing the plants for the winter we remove them from the conservatory, in which a little higher temperature has to be maintained than is conducive to the welfare of the Clematis, and replace them with other subjects to flower during that season. I find that if kept in heat they start into weak growth and flower indifferently, the flowers being small, thin, and badly coloured. This materially interferes with that successive and massive bloom which they produce if afforded a due amount of rest in the short days of winter.

Nothing can have a finer effect in the conservatory than masses of Clematises; the flowers are soft but brilliant, of the largest size, and consequently conspicuous at a distance. I have had from one to two hundred expanded blooms on a plant at once. I have them trained to the rafters with that best of all climbers for large buildings, *Tecoma Van-Volxemi*, rambling from rafter to rafter amongst them, the brilliant crimson flowers of the latter being very effective.

There is yet another advantage in growing Clematises under glass roofs—namely, they are well adapted for houses where evergreen climbers are quite out of place; being deciduous they do not obstruct the light during the winter, a matter of no little moment when flowers have to be produced at that season. Those who have to contend with cold, damp, sunless conservatories can alone fully appreciate this boon. I can well understand the preference for evergreens as climbers, still they are generally grown at the expense of other plants beneath them; but the display afforded by the Clematis for eight months in the year, compared to the often ineffective one made by subjects of an evergreen character, renders them most desirable for covering roofs of glass structures.

I may add that though the flowers like plenty of light they should be shaded from strong sun.—JOHN TAYLOR.

### COCHLIOSTEMA JACOBIANUM.

THIS, in my opinion, is one of the most effective plants which has of late years been introduced into our stoves, and certainly deserves a place in every collection. I see in the "Gardeners' Year-Book" (1869) that it was sent out by Linden in 1868, and is a native of Ecuador. The price of this plant may be a great reason for its not being more generally cultivated; but it is a matter of some surprise that so little has been said of its merits, or that it is so seldom shown at our exhibitions.

Permit me to say a few words of one of these plants which at the present time I have here blooming in the stove. I purchased a small plant in July, 1872. In August of that year it was repotted in a soil made up chiefly of turfy loam and sand, and I proceeded to give it the ordinary treatment of stove plants. When the winter months came on I found that it required but very little water. By the daily course of syringing I also found that water lodged at the axils of the leaves and remained there, which made me fear that it would soon cause the base of the plant to decay; I therefore several times during the winter dislodged it by placing the plant on its side.

In April, 1873, the plant was again repotted, treated as above stated, but I soon found that it required a liberal supply of water, and its growth became very free. On the 20th of May I observed four flower spikes emerging from the axils of the leaves. A month later these flower spikes measured a foot in length, and the first bloom expanded—a stage which

had been anxiously looked forward to by me, as, I suppose, is the case generally with those who are treating new plants for the first time. After a few days the plant was removed to the conservatory, where its blooms continued opening until September, up to which time as many as two hundred blooms had expanded. I would particularly wish it to be remarked that the plant remained in this situation as long as I thought it consistent with its safety, and to this I attribute much of its prosperity in the year of which I shall now write.

Having again replaced it in its old position in the stove, the same treatment was again adopted, and the same care taken to dislodge the water from the axils of the leaves. The plant has continued to thrive under this treatment, and its dimensions at the present time are—height, 4 feet; breadth, 6 feet. It has thirty leaves, some of which measure 3 feet 6 inches in length and 7 inches in breadth, and is now showing fourteen spikes, and I have measured some of them 18 inches long. They are thrown out well from the leaves, the extreme breadth of spike being 10 inches. The spikes, which are just being thrown up, appear to be more vigorous than those expanded. I should, perhaps, also say that as many as sixty blooms are showing upon one spike.

I have made these remarks in the hope that someone may be induced to write more fully on this beautiful plant.—  
THOMAS NEWMAN, *Torrey Hill, Sittingbourne.*

#### STOVE PLANTS AND THEIR CULTURE.—No. 1.

My aim in giving a series of papers consisting of descriptive notes and cultural hints on stove plants, will be to name only the best and most useful for their flowers and foliage. The description of house most suitable is omitted, also temperature, moisture, and ventilation, which are week by week treated of by Mr. Douglas.

##### CLIMBERS FOR ROOFS OR RAFTERS.

As plants for this purpose must necessarily be free-growing, large pots or tubs are required, but as these are cumbersome and take up much room, planting in a border is preferable. It should not be less than 2 feet wide, better 3 feet, and 3 feet deep—9 inches for drainage, and 2 feet 3 inches for compost. I have all round the house a border 3 feet wide and deep. Along the bottom is a drain of 3-inch pipes, and 9 inches of rubble over the bottom of the border, the roughest lowest down and the finer at the top, and above this I have the rough parts of the compost of which the border is formed. The border is made 9 inches higher than the intended level to allow for settling. It should be divided by cross walls, the lowest three courses of bricks pigeon-holed to allow the drainage to be free the whole length of the border, and taken up to the top solid; for neatness there may be a stone capping, or the highest course of bricks may be laid in cement. The compost should be used rough, but the ingredients well mixed and placed in the border rather firmly, and when in a dry rather than wet state. Holes must be provided in the shelves to admit of the climbers' stems being taken through from the border to the roof, and the subjects should not be planted until they are of sufficient length to reach through the holes and be secured to the wires.

**ALLAMANDA CATHARTICA.**—Evergreen when moisture is given in winter, but if kept dry, as it ought to be, deciduous. Long rather narrow leaves, in whorls along the shoots at rather distant intervals. Flowers bright yellow, trumpet-shaped, about 3 to 4 inches long and 2 inches across the mouth, produced in bunches abundantly on well-ripened wood in July or earlier, and to September. Guiana.

**A. NOBILIS** is very similar to *A. cathartica*, the leaves somewhat broader, and the wood stouter and shorter-jointed. Flowers yellow, wider at the mouth than those of *A. cathartica*, and in form very superior to them, the broad rounded segments giving the flowers a full circular outline. It has also the advantage of fragrance. It blooms in July and August onwards. Brazil.

These are the best two for extensive roof or trellis covering. They are not strictly more than sub-scandent, having no provision for climbing or twining.

Full exposure to light is necessary to secure firm wood and profuse flowering. Pruning should be performed in February or March, cutting-in the side shoots to within two joints of their origin the previous year. Any that are required for extension, or to fill-up vacant space, may be cut-back to six joints, more or less, as occasion may render necessary, always

making sure that the wood is firm and well ripened. Soft unripe wood should be cut clean away, as also old bare shoots, and their place supplied with well-ripened shoots of the last season's growth. It is well to depress the shoots that are left of any considerable length, to ensure their breaking regularly from base to top.

Water should be given sparingly at the roots so as to moisten them gradually, and increase the quantity with the growth. When in full growth and flowering the watering should be liberal, but the plant never dry, otherwise the foliage will suffer. When growth is complete lessen the supply of water, and have the plants at rest by November, from which time up to March no more moisture will be needed than will keep the wood plump.

Syringe overhead morning and evening up to the flowering period, when syringing should be discontinued, and when breaking in spring the plants ought to be sprinkled overhead three or four times a-day, which is conducive to the eyes breaking well.

Light fibrous loam three parts, leaf soil one part, half a part sandy peat, and a sixth part each of silver sand and charcoal in lumps from the size of a hazel nut to that of a walnut, well mixed and chopped-up, but not very fine, will grow them perfectly. Good drainage is necessary. Repotting should be done in spring after the plants are pruned and are breaking freely, removing most of the old soil. If the plants are planted out the border should have the surface soil removed down to the roots, replacing it with about 2 inches thick of fresh material.

Propagation is effected by cuttings of the shoots, short-jointed wood being best, inserted in sandy soil, plunged in a bottom heat of 80° to 85°, and kept moist and shaded. The thicker parts of the roots, either layered in tan or other moist substance, or cut into lengths of 2 or 3 inches, push shoots and roots freely, and have only to be potted. If layered in tan, cut off the shoots with a portion of root, and grow them on. It is a readier mode of propagation than by cuttings, and the plants so raised are of freer growth. Spring is the best time for root-cuttings, and May and June for cuttings of the shoots.

**ARISTOLOCHIA DUCHARTREI.**—Deciduous twiner, with woody corky-barked stems, and ovate-cordate, acuminate, subpeltate leaves. Flowers of only moderate size, produced in tufts from the old wood, brownish outside, creamy within, with shining dark-brown marking, curved tube, concave-ovate limb. Upper Amazon.

**A. GIGAS.**—Deciduous twiner; woody corky stems, large ovate-cordate leaves, and large whitish-yellow flowers veined with dark brown. Flowers in May and June. Guatemala.

**A. LEUCONEURA.**—Sub-arborescent; cordate whitish-yellow-veined leaves, and curious chocolate-purple yellow-veined flowers proceeding from the stems in summer.

There are a number of other species—*A. grandiflora*, with large flowers, Jamaica; *A. ornithocephala*, the flowers resembling a bird's head, and produced at the end of summer, Brazil; *A. trilobata*, with three-lobed leaves, and purple flowers in June, South America, with several others, all of which have curious flowers and fine leaves.

The best of the genus is probably *A. leuconeura*, the leaves being very fine and distinctly marked. All are free in growth, and require to be cut-in to an eye or two of the stem in February or March, leaving some of the well-ripened wood of the previous year, and cutting-back any old stems. The shoots ought not to be much crowded, but trained rather thinly, the object being to have the wood well ripened.

Water freely while the plant is in growth, and in winter keep it dry. *A. leuconeura* will retain its leaves if kept moist, and so indeed will others, but it is desirable to rest them, as they otherwise keep on growing through the winter, and do not grow or flower satisfactorily. Watering or syringing overhead twice daily is very beneficial, as the plants are subject to red spider, which the syringing keeps under. They require a light and airy position.

For soil use three parts light turfy loam, half a part each leaf soil and sandy peat, with a sixth part silver sand, and a few nodules of charcoal. Good drainage is necessary. Propagate by cuttings of firm young stubby side shoots, in sand over sandy peat and loam, placed in bottom heat and covered with a bell-glass. Some of the scarcer kinds are grafted on stocks of *A. gigas*, which operation is best performed in spring, with firm wood, in a close moist frame in the stove or propagating house.

**BIGNONIA CHAMBERLAYNII.**—Evergreen climber, with yellow trumpet-shaped flowers in August. Brazil.

**B. SPECIOSA.**—Pink or mauve-coloured flowers, produced in early summer. Uruguay.

**B. VENUSTA.**—Orange flowers, very fine, at the end of summer.

There are several other species, but the above are fair representatives of the genus. They are magnificent climbers, but do little or no good in pots, requiring to be planted out. The shoots must not be closely crowded, but placed so as to be everywhere exposed to air and light, so as to secure the ripening of the wood. The flowers for the most part are produced on short shoots issuing from well-ripened buds of last year's growth. The chief point in the cultivation of these plants is to get the wood well ripened, therefore they should be kept dry in autumn, and the shoots, with the same object, should be thinned and regulated so as to be fully exposed to light. Water the plants abundantly when growing and flowering. Prune in spring before growth commences, cutting out the old wood and replacing it with the well-ripened shoots of last year, shortening to well-hardened wood.

The most suitable soil is sandy peat and fibrous light loam in equal parts, one-fourth leaf soil, a sixth of silver sand, and a few nodules of charcoal, with efficient drainage. Propagate by cuttings of short stiff side shoots, taken off close and inserted in sand over peat and loam, covered with a bell-glass, and placed in bottom heat, shading and keeping moist.—G. ABBEY.

## EFFECTS OF GAS ON SEEDS IN NURSERYMEN'S SHOPS.

HAVING been in the habit of purchasing flower seeds from various nurserymen, I had often remarked the great difference in the results both as to the proportion germinating and the quality of the plants produced by them, but it never occurred to me until quite recently what might possibly be the cause of the failures. On looking round at the various shops to see how the seeds were kept, appearances were strongly in favour of the belief; and on purchasing about a score of varieties from a little nurseryman, who has no shop and no gaslights, I was more than ever convinced there must be some truth in the suggestion.

The products from the combustion of gas are known to be highly destructive in many respects, such as to the binding of books, the rings and cords of pictures, and brass work in every shape, but more especially so to growing plants, and if any oxidation should take place in the germ of seeds it would of course destroy their vitality. The remedy which naturally suggests itself is, that seeds should not be kept on shelves or in lockers above the level of the gaslights, but as much below, and as near the floor, as is consistent with dryness; and they would be far safer in wooden boxes or casks than in tin or metal cases. It is not improbable, also, but that some qualities of paper—from the bleaching powder not being got rid of—may be injurious by the gas acting upon them, and I strongly suspect that common coarse brown paper would be far preferable and safer than any description of bleached or coloured paper can be for the purpose.—W. KENEDY BRIDGMAN, *Norwich*.

**AGERATUM IMPERIAL BLUE TOM THUMB.**—I can fully endorse all that was said last week by Mr. Hamilton about *Ageratum Imperial Dwarf*; and I have made inquiry and find that others have shared the same fate.—ENOS JACKSON, *Gardener to Col. E. Smythe, Welton-le-Wold*.

## RED-LEADING SEEDS.

It appears to me very singular that Peas have been taken by rats or mice after having been coated with red lead. I presume the snuffers have not followed the method I recommended as the first discoverer, but have acted upon that described by your late lamented correspondent, Mr. R. Fish, who, if I understood him aright, moistened the seed with water, instead of giving a slight coating of linseed oil. During an experience of sixteen years I have never but once discovered the felonious presence of either rat, mouse, or bird; on that occasion I missed six Peas, which I found about 2 yards distant quite uninjured. I have at the present time rows of

Peas and Beans which have not been molested in the slightest degree, and I am fully persuaded that if properly prepared it will prove the most simple and effectual preventive to this annoyance. I last year sowed some Broccoli seed without dressing, when, before I could perceive the appearance of the young plants, the birds had pulled up the greater portion of the bed. As soon as I made the discovery I threw some seeds which I had dressed on the bed, and not another plant was disturbed.

The preparation should be made in the following way:—Say to a pint of Peas put into a vessel large enough to be shaken about, let fall six or seven drops of linseed oil, shake round well, then sprinkle a few pinches of dry red lead, and shake round again until the coating is perfect. The seed is then fit for sowing. Wrinkled Peas require rather more trouble than smooth ones. Mr. Fish was unnecessarily cautious about handling the red lead, as well as not to dress at once more Peas than required; I have used the following season some that I had left, and found them equal to those fresh dressed.—JOSEPH BURGESS, *Knutsford*.

[Your Raspberry had been noticed by us in our report of the Society's meeting.—*Ens.*]

## FOUNTAIN'S VINERY AT BLENHEIM.

I SEE in THE JOURNAL OF HORTICULTURE of last week that Mr. Temple, the gardener at Blenheim, has made some remarks upon my vinery there which I am desirous of answering. Although he says he has read my pamphlet on the subject, he certainly misapprehends some essential points therein stated. I may have expressed myself badly; if so, there is the greater reason that I should correct the mistake. He says it is of no use wheeling-out the trees where Vines and Peaches are not grown overhead. It is true Vines ought to be grown overhead, though certainly not to cover the whole roof; but, whether there are Vines or not, the flavour and colour of the fruit are immensely improved by the trees being wheeled-out into the open air in favourable weather, and much saving in watering thereby effected, especially in wet seasons. As to the question of stone fruit grown immediately under Vines—that is to say, not the lower half of the house stone-fruit trees and the other half Vines, as is sometimes the case, but trees absolutely under the shadow of Vines which cover the whole house, if Mr. Temple asserts that such fruit is worth eating at all, that is a point upon which we must differ *in toto*; but if he means only half each sort of fruit, as stated in the parenthesis, it is entirely beside the question; though, even then, a division in the house, or two houses half the size for each kind of fruit, would be much better, as the stone fruit requires much more ventilation than the Grapes.

He mentions Mr. W. Thomson as having been successful in this process of fruit-growing. If he alludes to Mr. Thomson, of Galashiels, formerly gardener to the Duke of Buccleuch, he could not refer to a higher authority in England upon the subject of fruit-growing. It so happened that I submitted a plan of my house, as a vinery, to Mr. Thomson before the house at Blenheim was erected; he was kind enough to write to me in answer, "that nothing could be better than the sketch I sent him," and he volunteered to put an engraving of it into "The Gardener," of which he was then the editor. He spoke most favourably of the system, adding, "Our opinion is that by this contrivance a crop of Grapes could be grown in every orchard house, which without it would be nearly impossible." This does not look like being an advocate for growing stone fruit in the shade. But I surely think I must misunderstand Mr. Temple on this point. He goes on to state that he saw the house at Chiswick; and though he admired the Grapes as very fine, he was not favourably impressed with the system as "a profitable method of growing fruits," and he feared that "market men would not be ready to adopt the plan." In this latter view I quite agree with him; and further, if it resolves itself in a question of "£ s. d." (as he puts it) I strongly recommend Covent Garden as superior to all systems, and certain as a panacea not only for watering but all the other labours to which gardening is heir. He will, however, find on referring to the pamphlet that I especially disclaim growing fruit for market, as requiring a totally different process from that required for a gentleman's table, the one being for quantity, the other for quality; not but that we can grow quantity, but this is *in all cases* at the sacrifice of quality—what I maintain is, that, by the same sacrifice of quantity the same quality of

fruit will not be produced by the ordinary processes of fruit-growing for market.

Mr. Temple goes on to state, that when he took the house a year and a half ago there were no Vines, nor are there now, and as objections had been formerly made to them he abandoned the idea, and "prepared the trees for work, and many of them, especially Plums, Peaches, and Nectarines, bore fine crops of large, finely-flavoured fruit." "I never saw," he says, "Green Gages so fine in the most favoured districts of England. The trees evidently had been managed with skill before they fell into my hands, and I would follow out the pot-system were it not the enormous labour it entails from the water-pot." Mr. Temple may, on account of the watering, object to the orchard-house principle generally, and especially where the trees are grown in pots, which many prefer, but he must at least admit that this applies to my branch of the system infinitely less than to any other, inasmuch as the trees may at five minutes' notice have the benefit of any amount of rain he may think fit to give them.

The objection I have always heard made by amateurs against orchard houses, and which I have myself experienced, is not so much the labour, as the bad flavour of too large a proportion of the fruit. Of course, there is more labour through the summer attached to an orchard house than to walls, especially if the spring frosts should have destroyed all the fruit on the latter, when they would require but little further trouble that season; but the labour is generally repaid by a crop being insured, which cannot be relied upon for certain by any other process. It is upon this that the orchard house has stood its ground.

Mr. Temple goes on to state, that "the interest and knowledge it affords in a pomological sense is of great value, but proprietors generally prefer profits in a tangible form." The interest and advantages are very great, though not alone in the sense which Mr. Temple means. It is most useful to have the trees so arranged on the trucks that the fruit comes-in in succession instead of being all ripe at once. Thus there should first be, say a truck of early Peaches, and so in succession till the last outer truck contains only the late sorts. The fruit on the early trucks may be encouraged in maturation by the assistance of the house, and that of the late sorts retarded by the open air. The season may by this process be much prolonged, which is surely a great desideratum in a gentleman's garden.

He says "In conclusion, I believe Mr. Fountaine's system can be adopted with success, and if I were to give it a trial on its widest merits I would take out the end of a well-established vinery," &c. If instead of being so lavish of faint praise, and proposing to try the system on ideas of his own diametrically opposed to the principle advocated, Mr. Temple were, in good faith, to try it on its own merits, and in its own house constructed for the purpose, he would be in a better position to offer the advice contained in his concluding remarks to the inexperienced. Let him plant Vines *not less* than 8 feet apart on the rafters, upon the close-spur system, so that the trees may have the benefit of the sun when in the house, especially in the autumn after the fruit is gathered, when they always require it to insure the ripening of the wood for the following year, as do also the plants on the back wall, which ought to be Vines, not Peach trees as at Blenheim, but this is not of moment; and then let him say honestly whether he has any other houses in Blenheim Gardens which grow finer Grapes or finer stone fruit either separately or conjointly, and this alone ought to be the test whether the system and structure are a "burlesque upon fruit-growing to the experienced." I myself have only had fourteen years' experience in gardening, devoted, it is true, to this one subject alone; but when the Blenheim house was first built, a long article appeared in the *Gardeners' Chronicle*, September 10th, 1870, signed "B.," and written, as I afterwards ascertained, by no less an authority than Mr. Barron, stated that "decidedly the most important feature, in a gardening point of view, and the best piece of gardening in all that wide place was the orchard house à la Fountaine," &c.

Mr. Temple may have created great improvement since then, but I will nevertheless endorse with confidence his advice to the inexperienced with which he closes his remarks—"to go and see any system of fruit-growing before they spend their money on structures, &c." (the &c. may mean anything); but I say, Let them go to Chiswick and see the house which was built there for that express purpose; and although only a plain cheap house, let them ask Mr. Barron if he has any other in

the gardens constructed on more scientific principles, or better adapted for producing fine Grapes, or to assist the stone fruit when required, for I admit that the open air is the real life and soul of the goodness of the latter. I engage to say they will at least receive a straightforward and honest answer to their question.—JOHN FOUNTAINE, *Southacre Rectory, Brandon.*

## THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 19.

THERE is something so refreshing to the eye and so gladdening to the spirit in the appearance on the wing of the first butterflies of the season, that it is almost a wonder these insects have not been regarded as joyful omens, and the individual who sees the earliest out after the cold and gloom of winter as specially favoured. I do not discover any traces of such beliefs, though some people from a long time ago have paid attention to them as weather prognostics, since it was supposed that when butterflies, few or many, were observed taking their constitutional in the early morning, a fine day might be looked for. This may occasionally be the case, but it is not to be relied upon as an indication; and certainly not the reverse, for the absence of butterflies from the landscape may arise from a variety of causes, and it would not follow that they are keeping under shelter because of an anticipated downpour. It is just now, in the fresh springtime, that butterflies seem even more appropriate to the garden or the rural scene than in the height of summer; and, in fact, some investigators have made out that our ancestors called these gaudy insects "butterflies" on account of their emergence in plentiful numbers just about the time when butter was obtainable in more abundance than at other seasons of the year. I doubt this explanation, and also the semi-jocose one that "butterfly" is a corruption of "bother-fly," and the uncomplimentary epithet applied to the species seen in gardens by some irate horticulturist, who thought they loved his Cabbages "not wisely but too well."

There is a species now coming abroad which, from its often flying in suspicious company, may be assumed by the little-informed observer to be one of our garden foes, whereas in reality it is as innocent as a baby. This is popularly known as the Orange-tip, *Anthocharis Cardamines* (fig. 1), and it has a wide if not a general distribution throughout these islands. Frequent in woods, it also visits gardens in search of the honey which may often be more plentiful there than in the fields or pastures not far off where the insect had passed its preparatory changes. Some years ago it was abundant in April as near London as Shepherd's Bush, north of Hammersmith, and Norwood on the south, but the destruction of the food plants thereabouts and the researches of juvenile entomologists have borne hardly upon it. In May, 1860, a traveller observed this butterfly at Sligo flying in such large parties that he was reminded of the South American hosts of an allied species which he had seen in other days. This, however, is a circumstance unusual, and the Orange-tips are seldom noticed in a greater number than two or three together, oftentimes accompanied by the common Garden White, in size and mode of flight much like its more showy brother. The English name of the insect has been given from the conspicuous orange spot displayed on the upper and under sides of the fore wings of the male, while it is wanting in the female, where we have only a grey border. In both there is a dark central spot on the white ground-colour of the fore wings. The hind wings are much the same in the two sexes, their beauty being especially on the under surface, where we have a fine green tracery, which reminds us on a small scale of the straggling growth of some minute moss on a hoary stump. By a moderate magnifying power we can resolve this green shading into a mingling of yellow and black scales sprinkled over the white ground, but the effect of this is lost when the field of the microscope is not illuminated by daylight. Now and then a male Orange-tip turns up with one orange blotch deficient; and I possess a curiously dwarfed female specimen in which the expansion of the wings is only about one-half the average, due, doubtless, to mal-nutrition in the larval state.

Though the butterfly has received its Latin appellation from the species of *Cardamine*, mostly *C. pratensis* (Lady's Smock), on which it has been traditionally reported to feed, Mr. Doubleday has, with his usual discernment, pointed out that the caterpillar is often found on allied plants of the Cruciferous order, such as *Erysimum Alliaria*, *Barbarea vulgaris*, and Hes-

peris matronalis; also, as he remarks, when the caterpillars feed, as frequently they do, upon these and similar species growing in meadows, the bulk of the brood must perish, because the grass is mowed just at the time they are feeding. Of course we also find the caterpillars on plants along the hedgerows; still, the former circumstance may tend to keep down the

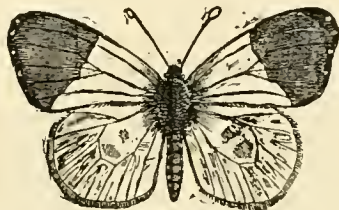


Fig. 1.—*Anthocharis Cardamines*.\*

numbers of this butterfly, which also does not, I believe, deposit so many eggs as some of its relatives. The caterpillars rarely touch the leaves, preferring the seeds and pods of the plants they frequent; and as Mr. Newman notes with regard to individuals he had in rearing, they will nibble holes in the pods to obtain the seeds, leaving the pods until the supply of food runs short. In general appearance this caterpillar is of the "Cabbage type," green with a pale stripe, and dotted with warts both black and white, each of which sends up a short bristle. Having ceased to eat, about the beginning of July usually, the Orange-tip caterpillars fasten themselves by a band of silk to the stems of grasses or other plants, and then pass into the chrysalis state. The shape of the latter is singularly unlike the chrysalis of nearly all the British butterflies, having much the form of a crescent, the wing-cases bulging out towards the centre of the arch. Throughout the winter months the insect continues dormant, and to hunt for the chrysalis along the banks may be a diversion to some naturalists, though rather a back-aching employment.

Entomological books have sometimes advised the beginner who is in search of the Azure Blue Butterfly (*Lycæna Argiolus*) to set to work in April, and beat with a stout stick all the Holly and Ivy within his reach. It is not certain that success will attend his efforts, and if he experiments in gardens he will not be thanked for disfiguring Hollies by this thrashing process. It seems to be a fact that the butterfly is to be discovered in and about Holly, Ivy, and also Buckthorn in early spring, and farther on in the season we see it again when it visits garden flowers pretty boldly; and it has a trick of popping over the nearest hedge if approached, seldom taking a long flight, and frequently returning to very nearly the same spot again. This species—misnamed "Azure Blue," since it is not so azure as is *L. Adonis* and others—has long been a puzzle to naturalists, owing to the difficulty there has been in ascertaining when and upon what the larva feed. It is rare or unknown in the north of England, but in the south not uncommon in most districts, where it joins sometimes in playful combat with its relative the Common Blue, though that species is more partial to open ground than *L. Argiolus* usually appears to be, which may arise from its having (as I fancy) a par-

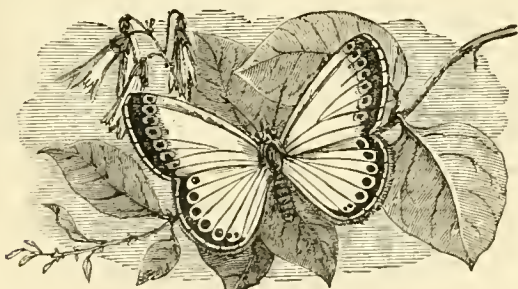


Fig. 2.—*Lycæna Corydon*.\*

ticular dislike to wind, as I have soon seen them cease to fly on a fine morning if it becomes at all breezy. The Blues among the butterfly tribes are not easy to distinguish from each other. The species before us has purplish blue wings, with a broad

black border in the female insect, and a narrow one in the male; the latter is also superior in size to what is certainly not his "better half." Underneath, both are of a silvery grey tint, with black spots variously arranged, and we perceive none of those orange markings so peculiar in others of the Blues.

The caterpillar of this elegant species is of the singular shape, which from its resemblance to the woodlouse has received the compound epithet of "onisciform;" and in crawling, the legs are pressed so closely to the body that it would almost seem as if the creature glided along like a slug. It has been variously described by English and continental authors, and according to Prof. Westwood it is usually greenish yellow, with a line of bright green down the back, and the head and legs deep brown or black. I regret to say that my efforts to make the personal acquaintance of this curious caterpillar have been fruitless, though I have braved the stings of hosts of bees by exploring the flowers of the Buckthorn in spring and the Ivy in the autumn, for the flowers have until recently been considered to be the special food of the larva of *L. Argiolus*. The latest wrinkle, however, is that some have been taken devouring the tender leaves of the Holly. Mr. Newman is still rather inclined to favour the notion that, supposing there are two broods, the first feeds on the Holly and the second upon the Ivy; and Mr. Horley has certainly obtained a larva from the latter plant in November, which individual passed into the chrysalis state, and so remained until April following. Others hold to the theory that the butterfly hibernates as a rule, and others again point to the fact that a May and an August brood are occasionally found in districts where only one of the supposed food-plants grows, as conflicting the migration theory. As in one place the butterflies were seen hovering about the *Laurustinus*, the idea may be entertained that that plant may have some connection with the insect.

Connoisseurs in colour have declared, however, that although the Azure Blue is a beautiful butterfly, the Chalkhill Blue, *L. Corydon* (fig. 2), in its silvery tints almost surpasses it. These hues are only observable in the male insect, the female being smoky brown. The work of maternity, which chiefly engrosses her attention, does not take her far away from the place where she was reared, and where she in her turn deposits her eggs on Trefoils or Vetches. The male butterfly takes a wider range, and visits gardens in the chalky districts, though seldom compared with *L. Argiolus* or the lively and common *L. Icarus*. On the Bird's-foot Trefoil (*Ornithopus perpusillus*) have been reared the caterpillars of the Silver-studded Blue (*L. Egon*), a smaller species, recognised by silvery spots on the under side. (See fig. 3). From its diminutive size this is often unnoticed. It used to occur near London, on the Surrey commons, but has of late years taken its departure.—J. R. S. C.

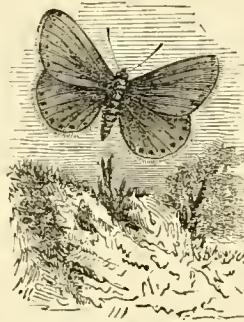


Fig. 3.—*Lycæna Egon*.\*

P.S.—From some indications of favourable, or rather unfavourable increase, already noticeable, it is possible that we may have, as I fear, a plentiful supply of aphides in 1874, though some heavy showers in May would "turn the tables" on them. A friend of ours, who has more belief in the natural enemies of destructive insects than in the man-devised means of diminishing them, has invented what he at first termed the "Lady-bird Rouser;" but aware of the importance of a fine name to render an article saleable, he now terms it the "Coccinellid-Stimulator." He had often observed with vexation how languidly these beetles crawled about in the spring, when they should have been devouring aphides or depositing eggs amongst them; and hence set himself to invent a compound which should diffuse a vapour that might rouse them to high activity. I am bound to say that the first experiments were not favourable, for after a brief spell of spasmodic briskness the lady-birds seemed to be dead; but I am told that the reason was that the fumes were a little too stimulating, and the discoverer still hopes to perfect his invention and extend its application.—J. R. S. C.

LIVE SCORPION IN LONDON.—The animal found alive clinging to a boot is a small real scorpion of the slender form not

\* From Messrs. Cassell's edition of Figuier's "Insect World."

uncommon in the West Indies and South America. It was probably imported with merchandise of some kind.—I. O. W.

### ROYAL HORTICULTURAL SOCIETY.

At the meeting on Tuesday, 21st, exclusive of the Council, there were not sixty Fellows present out of between three and four thousand, and this after your and the *Chronicle's* articles of the week before, and at a meeting at which the Chairman, at first at least, made the vote on proxies one of confidence in the Council. I have strong hopes that before three years are over we shall have a Society the Fellows of which will take an interest in its proceedings.

It seemed to me, to say the least, impolitic in the Council to prevent Mr. Fish voting. Gardeners hold together more than nurserymen do, and may make common cause. Mr. Fish's exertions were one great cause of the success of the first and therefore most important of the country shows; the then Council, with a view to the future as well as the past, wished to recognise his services handsomely. The way to do this at least cost to the Society was to make him a forty-guinea life Fellow. The present Council say that doing this was contrary to the Charter. As there are so many legal authorities on the Council its judgment is probably correct. If this be so, the right course would have been to have elected Mr. Fish a Fellow, and to have given him a cheque for forty guineas, which he would have used for his life composition: he would then have been legally as well as morally entitled to vote.—GEORGE F. WILSON, *Heatherbank, Weybridge Heath.*

### WHICH IS THE BOILER TO BE PREFERRED FOR GARDEN STRUCTURES?

In horticultural publications the query, "What is the best description of boiler?" has been so often discussed that I was in hopes, when I gave a sort of brief history of my acquaintance with such matters, that in complaining of the very best description of boilers that I was acquainted with falling so far short of perfection, I could hardly be accused of being wedded to one particular kind. True, I gave the preference to the saddle, and at the same time admitted a good conical boiler had its advantages—not a small one, be it remembered, but a good-sized one, capable of holding sufficient fuel to keep the fire going a reasonable time. Some other descriptions of boilers I referred to as having had practical experience of; and I may also say that I had a house heated by the tank system for a dozen years or more at a stretch, but I did not like it sufficiently well to recommend its adoption. Some other modes of heating were casually alluded to; and now to the comments thereon.

Mr. Clarke, at page 305, very courteously points out that I have unfairly disparaged the mode of heating which he calls the lime-burning system. I am at all times sorry to differ from anyone whom I respect, and amongst the advocates of this system are one or two of my best friends, but I feel we are none the less so by differing in opinion on this matter; and as I confess not having had anything to do with the system in question, I can only give an opinion based on what I do know of lime-burning in an ordinary way, both on a large and small scale. I could only come to the conclusion that its advocates would get tired of it when its defects became known, and I added that I expected a year or two would consign it to neglect, if not oblivion. My opinion cannot fairly be called an erroneous one until the expiration of that time. Nevertheless, I shall be more pleased if I am mistaken, and am much obliged for such courteous correspondents as Mr. Clarke putting me right in the matter.

I next read a communication from "A RAMBLING C.E.," at page 329, who complains that I appear to have limited my observations to what has practically fallen under my view—the horticultural buildings I have had to deal with. Now, he could not have paid me a higher compliment, for I do as far as possible limit my observations to my own practical experience, excepting in cases where it is explained otherwise, and I put it to him or anyone else whether plain practical experience does not stand before theory? I wrote my article for a horticultural journal; "A RAMBLING C.E." all but ignores horticulture altogether, and gives us the oft-told story about boilers adapted for steam-engine purposes, a subject better adapted for a mechanical or engineering magazine or publication than a gardening paper. I daresay his communication would be more to the point there, for, as he seems to pin his faith to the merits

of the multitubular boiler, he will there find his pets in full force, and deservedly so. I do not deny the tubular boiler a certain amount of merit for horticultural purposes, but I place the saddle before it, notwithstanding "the principle which 'A RAMBLING C.E.' says he is astonished at being challenged;" but somehow I back practice against principle, believing that principle as here implied is only another name for theory.

However, in a matter of this kind there is no occasion for hard words; for, after all, your correspondent and I have little in common. I simply want a boiler that will heat the greatest possible body of water to a given moderate heat with the smallest amount of fuel and attendance, whilst your correspondent wants steam—two objects so widely different that it may reasonably be supposed that the same class of boiler will not do for both. The object of the engine-driver is to get steam up in the least possible time: hence his boiler is so constructed that every spoonful of water it contains is placed within a few inches of the actual fire, or in contact with the flues through which that fire passes. Now, contrast this with the hothouse-heating apparatus: the portion of water in immediate contact with the fire is only a very small percentage of the whole that has to be heated, in very few instances exceeding one-twentieth; all the rest is undergoing the process of cooling often hundreds of feet away, and the bulk of the water is seldom heated above 140° Fahr. Certainly it is hotter than that at times, but many very efficient systems of hothouse heating work for weeks together without that heat being exceeded; and allow me to tell "A RAMBLING C.E." that it is the reverse of economy to increase the temperature of the water so as much to exceed that heat: 160°—nay, even 180° may be attained, and I remember once (when I had personally the fire shovel and poker to handle) heating the water in the pipes of a hothouse so as to exceed 200° at the farthest place from the fire, and that, too, nearly as far back as the period of the Rocket engine he speaks of; but such extremes are only attained at a cost of fuel far beyond what would be wanted to heat an additional number of pipes to the moderate heat capable of warming the place intended in a more suitable way than by such forcible means. In fact, I am no advocate for extreme firing. I would rather have a greater number of pipes and heat them moderately, than drive the water with express speed through a smaller number of pipes. If I had my way I would rarely heat pipes hotter than that I could bear my hand on them for one or two minutes. A forcing heat of 70° can be maintained with this if all be well otherwise, and that in general is sufficient.

It is wrong to say that I hold up the saddle boiler as the pattern of perfection; on the contrary, the whole of my article points to the fact that the best-contrived heating apparatus we have permits an immense waste of heat which I should like to see saved and made use of. We all know that a pound of coal is capable of giving off a certain amount of heat and no more, but if 20 or 30 per cent. or more of that heat be expended on the brickwork or other surroundings not imparting it to the water in the boiler, it is wasted to all intents and purposes, and my principal object in calling attention to such waste was to ask the assistance of those who could devise a means of utilising the wasted heat. To me it makes no difference what kind of boiler is used. I certainly give the preference to the saddle, because it is the easiest worked, least likely to get out of repair, and, so far as I can judge, uses no more fuel than any other kind; and from the fact that it is always put forward by inventors or contrivers of new boilers for horticultural purposes as the test by which they compare their own, it is easy to see that they all look upon it as the second best, their own being, of course, paramount in their own estimation.

It has often struck me that the plan aimed at by so many boiler-makers of endeavouring to spread the heat over as wide a surface as possible, was in itself more plausible in theory than beneficial in practice; for, as the heat we want to deal with is not very great, the question is whether should it be concentrated to act on some 3 or 4 feet of surface, or spread over ten times that amount? for in the latter case there must be a great waste in imparting heat to the metal containing the water, whereas by the concentrated heat a less extended surface is acted upon; and although the boiler is a stationary object, the water in it is not, and its heated particles are more or less rapidly propelled upwards and onwards on its course, to be returned again in due time. Concentrated action, instead of diffused, is applied in so many ways now-a-days, that I expect our C. E.s in future will be finding out that where steam

really is not wanted the principle might be advantageously applied to boiler-heating for horticultural purposes, and I know a really well-contrived conical boiler takes a great deal of beating, and that, perhaps, has as small a space of heating surface as any.

If "A RAMBLING C.E." still insists on the superiority of the tubular boiler over the saddle, why is it that so many of the latter are still in use? And if he has any doubts of the popularity of the latter over the former, let him ask the first half-dozen hothouse builders and hot-water apparatus manufacturers which they have the more orders for, and which is the more generally and successfully adopted, and I have a shrewd guess that the saddle will offer a proportion of two or three to one. The majority of gardeners now-a-days are too shrewd and clear-headed to allow any real improvement to pass unnoticed; and if they prefer simplicity and usefulness to intricacy, ingenuity, and difficulty, so much the more to their credit. As both boilers have now been sufficiently long known to be tested by the hard censorship of every-day practice, I shall willingly give in if the friends of the tubular boiler exceed in numbers and outweigh in practice those of the saddle; but until that be done, "A RAMBLING C.E.," who says really nothing about horticultural heating, will excuse me if I still adhere to a good old friend, "the saddle boiler."—J. ROBSON.

## FLOWERS FOR OUR BORDERS.—No. 30.

LILIUM SZOVITZIANUM.—SZOVITZ'S LILY.

AMONG hardy bulbous plants the Lilies have long stood pre-eminent for their beauty and stately grandeur, and recent introductions have invested this genus with much additional popularity. Few of the more recently-introduced species, however, exceed in interest *L. Szovitzianum*, first cultivated in this country under the name of *L. celchicum*, by Messrs. H. Lew & Co., of the Clapton Nurseries.



*Lilium Szovitzianum.*

The figure accompanying this article conveys but a very inadequate idea of its ornamental value, having been drawn from a single flower furnished many years since by the late Mr. H. Groom, of Clapham Rise, an enthusiastic and very successful cultivator of the rarer species of Lily and other bulbous plants. In the case of strong bulbs the stem reaches the height of from 3 to 4 feet, and yields from six to ten drooping flowers disposed in a scattered raceme. In the fully-developed blossom the petals are more revolute than in the figure. The colour is a brilliant citron yellow, speckled internally with purple-crimson, and stained at the base externally with dull purple.

The flowers exhale the most delicious and powerful fragrance, perceptible at some distance, and it is, in fact, a question whether any other of the numerous species of this genus exceeds it in the sweetness and diffusiveness of its perfume.

The foliage is scattered, broadly lanceolate, smooth above, but paler and somewhat hairy on the under surface and on the margins. Bulb rather large, with yellowish scales. By the best authorities this plant is regarded as but a variety of the *L. monadelphium*, from which it is distinguished by its stamens not being united at the base, by the red colour of its pollen, by its longer style, as well as by some other minute characters. Like most of the species it is quite hardy against cold, and will succeed in any good substantial garden soil as well as in peat, but is liable to suffer from excessive wet, and precautions should therefore be taken to insure thorough drainage. Should the conditions of local climate render it desirable, protection against heavy rainfalls may be afforded by placing over the bulb a large inverted flower-pot, the opening being closed in wet weather.

Owing to the somewhat slow rate of increase of the bulbs of this genus, new species are less rapidly disseminated than in the case of plants readily propagated by seeds, and *Lilium Szovitzianum* is, therefore, in common with several other recently-imported species, rather rare and expensive. It is true that most, if not all of the Lilies, ripen seed under favourable circumstances, which vegetates quickly if sown as soon as gathered, but several years usually elapse before the bulbs are of sufficient size to flower.

Notwithstanding this drawback, however, we do not hesitate to recommend to those of our readers who may be endowed with a sufficient stock of patience, the propagation of the Lily tribe by seed.—(W. Thompson's *English Flower Garden*, Revised by the Author.)

## PEARS WITH HARDY BLOSSOMS.

[ALTHOUGH the experience recorded in the following communication was gained in America, its teaching is applicable everywhere. The subject deserves the attention of all Pear-growers, and the writer is a practical gardener and trustworthy.—EDS.]

THERE is certainly a great difference in varieties as to the hardiness of the blossoms. Varieties which thoroughly mature their growth early of both wood and bud, most successfully withstood the freezing of winter and the frosts of spring.

The blossoms on young trees are often killed when on older trees of the same variety they will not be harmed, and killed on low stations, and escape on elevated ones.

On girdled limbs I have often seen the blossoms set well, when on the other branches of the tree every bloom would fail.

I have seen where the tendril of a Grape Vine would in the summer twine around a small twig and cause it to mature its growth, and the following season the blossoms from this would mature fruit when all others on the same tree would fail from spring frosts.

Louise Bonne of Jersey is one of the most noted examples of hardy blossoms.

Belle Lucrative appears as if it particularly delighted in producing a full crop when all others fail. Flemish Beauty does not bloom in as great profusion as some others, but every blossom sticks, and a good crop of fruit is sure to follow. The same may be said of Swan's Orange. Easter Beurré, three years grafted into a bearing tree, produced last year on four of the grafts, not over 3 feet in length, from 6 to 12 fine large specimens each (the previous season did as well on two of the grafts). This was a good showing of its bearing qualities in the midst of a general fruit failure. To have endured the late cold winter and the spring frosts, and to have thus produced at once, places it on the list of hardy varieties.

The White Doyenné, Seckle, Urbaniste, and Julienne may be named with the foregoing as not only among the hardiest Pear trees, but as having blossoms possessing in a high degree the quality of resisting the frost. The Bartlett, Vicar, Duchess, Glou Morcean, and the Beurré Clairgeau are scarcely less productive, but have been more severely injured by the late cold winter than the other sorts which I have stated.

All produced some fruit with me (1873), and they have often borne full when other varieties (not herein named) were fruitless from the blossoms having fallen off.

In the year 1868, after almost constant rain for two weeks, a frost fell on the morning of the 7th of May. The Apples were nearly a total failure, but most of these Pears produced from half to full crops of fruit that season. The excessive rain in this instance may have damaged blossoms more than the frost: be that as it may, it shows the Pear, for once at least, to have been more hardy in blossom than the Apple.

Figue de Naples, Saint Ghislain, Soldat Laboureur, and Summer Bell I also find very reliable bearers, with some other good qualities to recommend them to the amateur Pear-culturist.—B. O. CURTIS, *Paris, Ill.*

As the father of Mr. Curtis set out a Pear orchard of 175 trees of some fifty varieties in Edgar county in 1840, now nearly thirty-four years ago (see Report Ill. State Hort. Sec., 1869), the above facts are given from a long observation and experience, and are of unusual value.—(*Prairie Farmer.*)

### THE CHAPEL OAK OF ALLONVILLE.

WE were about acknowledging that we have a "weakness" for remarkable trees, but we altered the word at once to "strongness," and we have had our strongness strengthened

by an iron gate. Above the chapel is a small chamber containing a bed, reached by a staircase winding round the tree. At certain seasons Divine service is performed in the chapel. The summit of the tree was broken off many years since, and over the cavity is a pointed steeple-like roof, slated, and surmounted by a cross. Over the chapel entrance is an inscription stating that Abbé du Detroit, curé of Allonville, constructed it in the year 1696. On a label over the door of the bed-chamber is its dedication to "Our Lady of Peace." Allonville is about a mile from Yvetot, on the road between Rouen and Havre.

### FRUIT PROSPECTS IN RUTLAND.

SUMMER-LIKE weather has burst upon us like a hurricane. To-day (April 25th) we had 75° in the shade, and the conse-



THE CHAPEL OAK OF ALLONVILLE.

since we have become acquainted with that most useful book, just published, "Wood and its Uses." We shall refer to that again. Our strongness for trees—and that of many of our friends—has brought one and another of us under the shade of a majority of celebrated trees; we have had a Simpink tiffen (*anglicè*, a champaign luncheon) under a Banian tree, the branches of which extended over an acre; we have gathered leaves from the Upas tree, and yet survive; we have lodged in the Chestnut of Mount Etna, and eaten its fruit; we have sat upon a trunk of the loftiest of the world's trees—the *Wellingtonia gigantea*; and one of us, some Easter in years long ago, attended service in the Oak of which we now give a portrait. That Oak, according to M. Du Breuil and Mr. London, is about eight hundred years old. It measures, just above the roots, 35 feet in circumference, and, at between 5 and 6 feet from the ground, 26 feet. A little higher up the trunk extends to a greater size, and at 8 feet it separates into enormous branches, overshadowing a very large extent of ground. The trunk is quite hollow, but the leaves and acorns are abundant. The lower part of the trunk has for many years been employed as a chapel, being paved and wainscoted, and the entrance closed

by an iron gate. Above the chapel is a small chamber containing a bed, reached by a staircase winding round the tree. At certain seasons Divine service is performed in the chapel. The summit of the tree was broken off many years since, and over the cavity is a pointed steeple-like roof, slated, and surmounted by a cross. Over the chapel entrance is an inscription stating that Abbé du Detroit, curé of Allonville, constructed it in the year 1696. On a label over the door of the bed-chamber is its dedication to "Our Lady of Peace." Allonville is about a mile from Yvetot, on the road between Rouen and Havre.

quence is that fruit trees of all kinds are rushing into bloom. Pears in orchards and on walls are now a "blaze of beauty," and the prospect of a full crop is most promising. Plums are remarkable for the great quantity of flowers they are producing; on walls dessert varieties are set, and, we hope, past all danger of frost. Cherries are a sight worth going a journey to see, they are one mass of flowers; on walls they are set and swelling fast. Among Apples many of the late-keeping varieties are in flower, while the early kinds will not be in flower for a week hence. If the weather prove at all favourable we may expect an abundant crop of this esteemed fruit, as the trees are everywhere showing well. Small fruits of all kinds promise an abundant supply. Strawberries are showing for flower, and are strong and healthy. Apricots were very much cut-up by the frost on the 11th of March, when the thermometer registered 5°, or 27° of frost. All the flowers which had started to grow were killed, those which had not commenced to grow were saved, and a moderate crop is left; those on an east wall have suffered most. Peaches are a moderate crop. The present mild weather is very favourable for the setting of all kinds of fruit; therefore, from the present appearance of our gardens

and orchards in this district, we may look forward to realise an abundant supply of fruit in the coming summer.

Peas are in flower in the open borders, and we look forward to be able to gather by the last week in May.—JAMES SMITH, *Exton Park Gardens*.

## EXTRACTS FROM NOTES ON A VOYAGE TO AUSTRALIA.

WHAT a cheery and honest ring there seems in Shakspeare's words where he says, "Come, my spade." "There is no more ancient gentlemen than gardeners." . . . They hold up Adam's profession." If it is not a profitable business, it is nevertheless a pleasant one and an honest one, and with truth may be said to be more ancient than the Golden Fleece or the Roman Eagle, and more honourable than the Star or Garter, or any other earthly profession in existence.

Melbourne, the capital of Victoria, where your humble correspondent in due time arrived, was in the wildest confusion and excitement. The "gold fever" was at its height. The contagion had spread everywhere.

I accepted an invitation to visit St. Kilda, the home of Mr. May, a nurseryman whom I previously met. He was an early acquaintance of mine, and his father had been one of my horticultural mentors when a young lad "in merrie England." Within his Vine-covered cottage in that beautiful suburban village I met with a hearty and hospitable welcome. Being a man after my own heart we readily agreed to explore the Botanic Gardens of Dr. Mueller fame. It was not the first time I had rambled through those excellent grounds, which presented so many attractions. Happily, they are better kept now than they were at the time of which I write. The same causes which had affected the Sydney Botanic Gardens had existed here. As is usual in all scientific establishments of a like nature, the gardens contained a good collection of the native and foreign flora, all of which were correctly named and properly arranged. The lake, or aquarium, was better stocked with aquatic plants than any other I ever saw. I could scarcely describe the many species without naming almost everything whose habitat was watery; but a few must suffice to mention where all were equally interesting—viz., *Victoria regia*, a regal plant in every respect; *Papyrus antiquorum*, *P. odoratus*, *P. laxiflorus*, *Cyperus Luzula*, *C. strigosus*, with several *Xyris*, *Nelumbiums*, *Nymphaeas*, *Nuphars*, *Pontederas*, *Limncharis*, *Hottonias*, *Valisnerias*, *Sagittarias*, *Trapa bicornis* (the Water Caltrops of China), &c.

There was also a fine collection of young Oaks, the species indigenous to this country especially. The same may be said of herbaceous plants. Most of the trees and shrubs with which the gardens were stocked were small though thrifty and vigorous. A few others I feel constrained to mention as having a special interest, and not often met with—in fact, all uncommon to Europeans and Americans. For instance, *Parkia globosa*, the Mitta Tree of Africa, and named in honour of the lamented traveller Mungo Park. Also the African Silver Tree, *Leucadendron argenteum*, a beautiful specimen; *Erythrina corallodendron*, the handsome Coral Tree, some 20 feet high; *E. cristagalli*, of fine arboreal proportions, and upwards of 30 feet high; *Fagara Pterota*, a native of Jamaica, an exceedingly beautiful tree, and then about 15 feet high. Perhaps the most interesting of all I noticed was the East Indian Teakwood tree, *Tectona grandis*. It appeared to be quite acclimated and thrifty. In India it is one of the most valuable timber trees grown, so generally useful: there it frequently attains to upwards of 100 feet high, and is highly esteemed for its uses in naval architecture, and is the most durable timber used for railway sleepers, &c. *Agati grandidora* is a splendid tree of great beauty, a leguminous evergreen: literally, it is a flaming tree if not a burning bush. There was also a fair specimen of the remarkable Banyan tree of India, *Ficus religiosa*, or the sacred tree of the Hindoos. Lastly, another interesting and ornamental tree, *Comocladia ilicifolia*, a Caribbean native of peculiar habit. The smooth stems are foliated only on the extreme ends, and appear as if they were tied on in bunches.

Taking passage on a small steamer which ran from Melbourne to Geelong, we passed down the muddy stream of the Yarra-Yarra to Hobson's Bay and Corio Bay. At the head of the latter stands Geelong. It was then a rather straggling town, while now it is a fine city of considerable importance.

The Ballarat gold fields, some fifty miles beyond, were then "in full blast," and Geelong being a sort of half-way town between the mines and the capital, was in a state of chronic

tumult with the miners on their way to and fro to Diggerdom.

Amid all this turmoil and commotion lived the complacent and happy Mr. Marlow, whose quiet deportment and steady equanimity nothing less than a thunderbolt or earthquake could shake or move from the even tenor of his way. He, sage and solid old gentleman, was contented, healthy, wealthy, and wise. He didn't go to the diggings. The golden changes which sounded so melodious in more sordid ears than his had no charms for him, although music and the love of song dwelt in him. Good old soul—yea, two of them; Mrs. Marlow, his helpmate, seemed so like him, and he seemed so like her, who was just such a rib as all good men deserve, from the region of the heart. I could hardly call her his "better half," although I believe wives generally are. They seemed so well mated, so evenly matched, so equally good, and though twain, were but one flesh. Truly, "they lived and loved together," believing in God and one another. "They also loved sweet posies, Lilies, Pinks, and Roses," as all such happy people do. For them to cultivate fruits and flowers was a dual delight which they duly enjoyed and much prized. They had a garden, a real "garden of delights,"

"Where lawns extend that scorn Arcadian pride,  
And brighter streams than fam'd Hydaspes glide."

When inquiring for the place, it was intimated that I could not mistake it when I saw the garden: it was impossible. It was even so.

I have often thought since then, if I did not see at Geelong the first example of sub-tropical gardening, at any rate it was the first time I had ever seen such an array of the rich and rare blended together in that character. There was displayed the best of taste and good judgment, fully up to the present style of London and Paris of to-day. Such a galaxy of Australian beauties, with the floral *bon ton* of other lands, made me exclaim, Surely, the like before was never seen!

You will recognise the following—namely, of tree Ferns: *Cyathea medullaris*, *C. dealbata*, *C. Cunninghamii*, and *C. princeps*, *Alsophila australis*, *A. excelsa*, *A. Leichardiana*, *Todea australis*, *Dicksonia squarrosa*, *D. antarctica*, *Cibotium Billardieri*, *Thamnopteris nidus*, and *T. australasica*, &c., with many of the smaller-growing species.

Of Palms and Cycads I noticed *Sabal Adansonii*, *Cycas revoluta*, *C. circinalis*, *Livingstonia borbonica*, *L. australis*, *Caryota urens*, *C. elegans*, *Euterpe edulis*, *Phoenix dactylifera*, *P. humilis*, *Rhapis flabelliformis*, *Corypha australis*, *Oreodoxa regia*, *Chamedorea glaucifolia*, *Jubaea spectabilis*, *Cocos nucifera*, *C. australis*, *Chamerops excelsa*, *C. elegans*, *Macrozamia spiralis*. There were also several varieties of Bamboos, *Zamias*, *Arundos*, *Cordylines*, *Dracenas*, *Philodendrons*, *Musas*, *Ficus*, *Marantas*, *Caladiums*, *Arunas*, *Phormiums*, *Dieffenbachias*, *Crinum*s, *Yuccas*, *Cannas*, *Aralias*, *Crotons*, *Saccharums*, *Acacias*, *Casuarinas*, *Arancarias*, *Hakeas*, &c. Of Succulents and their alliances, such as *Euphorbias*, *Rhipsalis*, *Opuntia*, *Epiphyllum*, *Aloes*, *Agaves*, *Mammillaria*, *Echinocactus*, *Kalosanthes*, *Crassula*, *Mesembryanthemums*, *Sempervivums*, *Ha-worthias*, *Stapelias*, *Dyckias*, *Echeverias*, *Umbilicus*, &c.; also *Echmeas*, *Tillandsias*, *Buonapartias*, *Coccolobas*, *Fourcroyas*, &c.

In conclusion, permit me to say that I subsequently heard of the death of that good old gentlewoman, Mrs. Marlow, some four years after I left Australia; and in the year following her husband, "that fine old English gentleman," crossed the boundary line of "the debateable land," and leaving his earthly Eden below, entered the one above.—(*American Gardener's Monthly*.)

## NOTES AND GLEANINGS.

A REMARKABLE instance of the rapid spread of a new pest is furnished by the history of *PUCCINIA MALVACEARUM*, a fungus parasitic on various plants belonging to the natural order Malvaceae. Its native country is probably Chili, where it was discovered by Bertero on *Althea officinalis*. Its first appearance in Europe was in April, 1873, on *Malva sylvestris*, in the neighbourhood of Bordeaux, and in August it had extended to several other plants of the same order in the botanic gardens of that town, but, singularly enough, was not found on *Althea officinalis*, several other nearly allied genera being also exempt from its attacks. In Germany it was first discovered in October, while in this country it was detected in the summer of 1873, nearly simultaneously in many widely-dispersed localities, as Exeter, Salisbury, Chichester, Sherborne in Surrey, the

neighbourhood of London, Eastbourne, Pevensy, Sandown in the Isle of Wight, and Lynn, and threatens to be exceedingly destructive to the Hollyhocks.—(Nature.)

[At Dartford Mr. Reeves has found every leaf of the Common Mallow infested with this destructive fungus.]

— THERE is now in flower in the grounds at Courtmacsherry, near Bandon in Ireland, a fine plant of RHODODENDRON CINNAMOMUM bearing 130 trusses of flowers, and each truss containing on an average eighteen flowers.

— WE are glad to see that Government have at last begun to carry out their agreement with the Trustees of the Bethnal Green Museum, by laying-out the vacant space around the Museum in gardens for the recreation of the people.

— THE botanists of Yorkshire and the North of England have commenced a subscription to mark the services of Mr. ABRAHAM STANSFIELD, of Vale Gardens, Todmorden, the father of the Botanical Society of Yorkshire, for his services to science, especially in Alpine and cryptogamic botany.

— THE prize list of the WESTERN HORTICULTURAL SOCIETY'S Show, to be held at Plymouth, as advertised, is very liberal. In addition to the usual money prizes there are plate and silver cups, valued at twenty, ten, and five guineas.

— On the 15th inst. Mr. J. C. Stevens sold by auction 286 lots of ORCHIDS for about £500. One *Masdevallia Veitchii* was knocked down for £10 10s. A new species, it is believed, of *Cattleya* fetched £6, and *Masdevallia ignea* £5 15s. 6d.

## NOTES ON VILLA AND SUBURBAN GARDENING.

The propagation of plants by cuttings is an operation more dependant upon art than any other which horticulturists have to contend with, for in addition to the incipient plant being cut-off from all communication with its parent, it is also deprived of all support, except the little matter it contains within itself and which is necessary to the formation of roots; therefore it is obvious that it is not only requisite to surround it by circumstances favourable to the production of roots, but also to prevent as far as possible any injury it might sustain by the evaporation of the juices. Hence the indispensability of a humid atmosphere in propagating pits, and of covering cuttings with hand or bell-glasses to prevent the escape of moisture when it is inconvenient to keep the whole atmosphere of a pit in a saturated state.

One of the greatest mistakes we commit in the propagation of hardwooded greenhouse plants is placing the cuttings in heat directly they are inserted in the cutting-pot. This ought never to be done, because the increased temperature and humid atmosphere cause the cuttings to grow, and consequently to expend that small quantity of matter which ought to go to the formation of roots; and hence, though the cuttings may appear fresh and vigorous for a few days or even weeks, it will generally be found that after that time they will turn black at their bases and ultimately die-off. These remarks are applicable to the propagation of hardwooded plants; but softwooded subjects, such as *Petunias*, *Verbenas*, *Heliotropes*, and *Pelargoniums*, which are more excitable, will root freely if put at once into strong bottom heat, though it must be remarked that such treatment is not to be recommended for cuttings taken from plants in the open air or a cool greenhouse. The most certain way is to place the cuttings in a close moist atmosphere, the temperature of which corresponds with that in which they have been produced, until they have formed the callus, after which, if removed to a moderate bottom heat, they will root with great freedom.

As to the preparation of cuttings great diversity of opinion exists among practical men, some advocating the removal of part if not all the leaves, while others as strenuously exclaim, "Touch not a leaf!" Under certain circumstances both parties are right, because if cuttings cannot be placed where all loss from evaporation is cut off, the more evaporating surface is decreased the better, since it is better that the leaves should be removed at once than that they should remain upon the cutting until they have exhausted it of its juices, which they would do in a very short time. But if a moist atmosphere can be kept round the cutting, then I say, "Touch not a leaf," except such as would make the cutting-pot crowded with foliage, because the leaves contain the matter out of which the roots are formed, and are the laboratories for the preparation of other matter to form branches and flowers. I have before remarked that cuttings cannot be too short if they possess the parts necessary to form a plant, and this fact can hardly be too much insisted upon.

From the above the amateur will be able to glean that the conditions for success in the propagation of plants are a moist atmosphere, a proper preparation of the cutting, and a moderate degree of bottom heat after the callus is formed.

After these remarks it is scarcely necessary to offer any on the

propagation of the Rose; but I may observe that in the Rose nurseries the plants are kept in a constant state of excitement in a strong moist atmosphere, to which little or no air is admitted, and the cuttings, when of the proper length and sufficiently firm, are taken off and planted immediately in very small pots, and plunged in a genial bottom heat, in which they generally root in about three weeks; they are then transferred to 60-sized pots, and in a few weeks are ready for the market. This is the process of Rose manufacture in the trade, and by it it is no uncommon thing to raise from five hundred to a thousand young plants from a single old one in the course of twelve months.

In the garden *Ferns* seem only appropriately introduced on what is called rockwork, which means a bank of earth irregularly terraced with mis-shapen blocks of stone, or by masses of some other hard porous material, the vitrified conglomerations formed by the burning of bricks being that most commonly used. With taste in the distribution of these and such-like materials, and in the planting of the *Ferns*, a very pleasing effect may be produced; and on rockwork of this kind, if it is erected in a shaded and sheltered situation, and liberally supplied with percolating (not stagnant) water, and if the soil is of a texture which will admit of being thus constantly moist without becoming soddened, nearly all the English *Ferns* may be grown successfully. The most sunny, most exposed, and least moistened position on the rockwork should be appropriated to those species which grow naturally in situations in which these conditions exist; while the kinds which naturally prefer the deepest shade and the dampest soil should be placed in the positions where these conditions are most nearly imitated.

The most interesting mode for the amateur *Fern*-grower consists in the cultivation of the plants under glass, either in pots or planted in a Wardian case. All the species admit of being grown in pots, and when developed under the protection of a covering of glass, acquire more than their natural delicacy of appearance. For the hardy *Ferns*, the frame or case in which they are grown should have a northern aspect. The plants must be kept cool in summer by shading, by sprinkling, and by removing all impediments to a free circulation of air at night, not quite closing the frame even by day.

Wardian cases for *Ferns*, in which they may be planted-out on rockwork, may be either of the size and nature of a small detached greenhouse, or of those windows or balcony greenhouses made by enclosing within a projecting sash a greater or smaller one external to the window, or they may be of smaller size and more finished workmanship for the interior of a dwelling-house, for staircase landings, or any other situation within-doors where they can be moderately lighted. The most proper soil for *Ferns* grown in pots or cases consists of the native earth called peat or bog earth and a sandy loam, mixed in about equal proportions, with a further admixture, equal to an eighth of the whole mass, for the more delicate sorts, of any pure granulated silicious matter, which is used for the purpose of preventing the too close adhesion and consolidation of the particles; the clean white sand called Reigate sand is that most generally employed; they are not benefited by manure.

The supply of water to *Ferns* under artificial conditions is a very essential matter. They must never lack water, or their fragile structure shrinks as before a burning blast, nor, with few exceptions, must the soil about them be kept constantly wet with stagnant water.

The dwarf herbaceous *Ferns* are characteristic of the temperate and colder zones, but even in temperate regions some of these herbaceous *Ferns* attain considerable height, as is the case with the common Bracken, which in the hedgerows of sheltered rural lanes in the south of England reaches the height of 8 or 10 feet, and assumes the most graceful habit that can be conceived.

Propagate double Wallflowers by slips of the young shoots of the head. Sow annuals for a succession, such as Sweet Peas, Mignonette, *Nasturtiums*, *Lupines*, *Flos Adonis*, &c.

Take-up those *Hyacinths*, *Tulips*, &c., which have done flowering, and dry them in the shade to put away. Support all flowers with sticks.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### FRUIT GARDEN.

At present the fruit garden is exceedingly attractive. Cherry trees are clothed in whiteness; Pears are in full blossom; and, more interesting and beautiful than either, the Apple blossoms are unfolding their delicate petals to the soft western breeze. Indeed it may be truly said that "all nature wears a face of beauty, and is animated with a spirit of joy." At the same time the trees now claim our attention. The eggs of the Lackey Moth (*Bombyx Neustria*) are now being hatched, and the larvæ are busily engaged spinning a tent-like covering to shelter themselves from a possible change in the weather. When they are all safe under this covering it will be the time to crush them, or to gather the webs with the caterpillars, and throw them into a pail with a few inches of dry lime at the bottom. A cluster

or two of this caterpillar, if allowed to spread over the tree, will quite strip it of leaves, as in the last stages of growth they eat voraciously. A far more difficult subject to deal with is the Apple maggot. This troublesome pest is also on the move, and can now be found curled up in the leaves and flowers. There is no more effectual way to destroy it than by hand-picking. In large orchards this would be impracticable, but in a garden where the trees are not large a man accustomed to the work can go over a number of trees in a day. Careful search is necessary, and the trees should be examined about once a-week. We are never troubled with the Gooseberry caterpillar, as the usual winter precaution taken effectually destroys the larvæ—that is, to remove the soil under the bushes to the depth of 3 inches, and replace it with fresh loam. Should the bushes be attacked with the caterpillar, dusting with white hellebore powder is the usual remedy. We ran the hoe through Strawberry and Raspberry beds; these had been hoed once or twice previously, but it is well to have every weed destroyed early in the season, as after "bedding-out" commences but little time can be spared for hoeing and weeding.

#### FORCING HOUSES.

**Vineries.**—The last few days have been a trying time to the early houses; the sun acted powerfully upon the leaves, and in some instances they were scalded. The leaves are formed at a time when the weather is dull and cold; much artificial heat is necessary to keep up the temperature of the house, consequently they are not of that robust healthy character which they would be if formed later in the season. Mixed some whitening in a pail of water, and syringed over the glass with it: this had the effect of shading the leaves sufficiently to prevent further injury.

In a recent number allusion was made to painting the hot-water pipes with flowers of sulphur to destroy red spider. It has been necessary to do so in three houses. The best way is to heat the pipes so hot that it becomes uncomfortable to hold the hand on the flow. This should be done after the house is shut up in the afternoon. Dissolve two ounces of soft soap in a quart of soft water, and add flowers of sulphur until the mixture is like thin paint. Apply the sulphur to the pipes with a mat brush, and keep the pipes about the same heat all night, with the house closely shut up. Should the spider not be destroyed, repeat the operation in a few days.

We have been tying-down the shoots and stopping laterals in late vineries. In all our houses, late and early, the Vines are trained on what is called the short-spur system; the rods are not less than 2 feet 6 inches apart, and the spurs are about 18 inches apart on the rods. Under this management, and by stopping the laterals two leaves beyond the bunch, the house does not become crowded with leaves. It is not necessary to apply artificial heat to the houses at this time unless the weather should become cold. We ventilate freely by day, but shut-up the houses with sun heat in the afternoon.

**Peach House.**—Where the fruit has stoned and is swelling for the second time a good heat may be kept up, thoroughly syringing the trees with tepid water in the morning and when the house is shut up in the afternoon. The night temperature may be 70°, with a proportionate rise by day. Peach trees will stand more heat at this time than at any other stage of their growth. Not a single red spider should be seen on the trees, for, if there are only a few when it is necessary to discontinue syringing as the fruit shows signs of ripening, the pest will spread with such amazing rapidity that the trees will be quite overrun, to their serious injury, before all the fruit can be gathered. When the fruit is swelling that will be the time to give the border a thorough watering. Some persons recommend using manure water; this we do not approve of, but much prefer to dress the surface with good manure—that of the cow and horse in equal proportions, with a little loam added to it. In late houses attend to thinning the fruit, thinning the young growths out, and tying-down those that are required to form fruitful wood for next season.

**Plant Stove.**—Many plants are now in full growth, and the more choice flowering specimens are either in flower or advancing to that stage. In previous numbers we have insisted on the necessity of having all the plants free from insect pests. There are many plants which it is undesirable to syringe; and some that ought to be syringed are, from necessity not from choice, placed amongst other plants that would be injured if their foliage were wetted daily. Such specimens must be washed with a sponge and soapy water. Some of the more choice Orchids are liable to great injury from the attacks of red spider. *Dendrobium Devonianum* is constantly being attacked, unless the plants are deluged with water from the syringe once or twice a-day. *D. chrysois* is another, but such plants succeed well if syringed daily, and this will be the means of keeping them in good health. Another most insidious enemy is the white thrips, which attacks the *Ladies' Slipper*. *Cypripedium Veitchianum* is more subject to attack than any of the others, though all the *C. barbatum* section are preyed upon. The insects get into the heart of the plant, and fumigating the house sufficiently to destroy them will also injure the plants. The best way is to

lay the plants on their sides and syringe the insects out with clear tepid water.

Tying and thinning-out superfluous growths of climbing plants, such as *Clerodendron Thomsonæ*, *Stephanotis floribunda*, &c. It is not desirable to tie the shoots in closely, but rather let them hang down in an irregular manner and looped-up in festoons; but they must not interfere with the growth of other plants underneath them.

**Palms.**—The hardier species were potted two months ago, but the end of April or early in May is probably a better time to pot those that do not make roots freely. Amongst others, *Phoenixophorum sechellarum* requires a little extra care. It is a most noble species, but the potting material should be porous and well-drained; equal parts of turfy loam and tough fibrous peat are very suitable for it. The plant should also be grown in the hottest house, and in the hottest corner. In striking contrast to the broad noble foliage of this plant, are the species with graceful, arching, finely-divided leaves, of which *Cocos Weddelliana* and *Chamedorea graminifolia* are the most beautiful, and also the most useful for decorative purposes in the dining or drawing-room. Four parts of good turfy loam to one of leaf mould are a very suitable potting material for them.

Potting-off young plants of *Eranthemum pulchellum* and *Bouvardias* of sorts. The most useful of all the *Bouvardias* for cutting from is *B. Vreelandii*, though for decorative purposes *B. jasminiflora* is as good; indeed, the old plants which flowered in midwinter have been again a mass of flowers for at least a month, and they stand well in the greenhouse. Cuttings strike freely in a little bottom heat in the Cucumber house, and if grown-on without any check they will flower freely at Christmas. The *Eranthemum* also flowers in the winter, and is not grown so much as it ought to be. It has one fault—the flowers do not stand well after being cut; but for decorative purposes in the stove this is not an objection, as the continued succession of fresh flowers keeps the plants in full beauty for many weeks. —J. DOUGLAS.

#### PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

	MAY.	JUNE
Royal Oxfordshire .....	6	Leeds .....10, 11, and 12
Gloucester and Cheltenham .....	7	Gloucester and Cheltenham .....11
Glasgow.....8 and 9		Royal Oxfordshire .....16
Bath.....13		Chertsey.....17
Royal Jersey.....13		Burton-on-Trent.....17
Royal Horticultural of Ireland ..	21	Thorne.....17
Cambridgeshire.....21		Jersey.....17
Manchester.....22 to 29		Guilford.....17
Southampton.....25		York.....17, 18, and 19
Blackburn.....25, 26, and 27		Fermoy.....18
Devon and Exeter.....29		Nottingham.....24
		R.H.S. of Ireland.....25
		Cambridgeshire.....25
	JUNE.	Thetford.....25
Glasgow and West of Scotland ..	3	Ipswich and E. of England 25 and 26
Undercliff.....3		Devon and Exeter (Roses).....26
Coventry and Warwickshire.....8		Boston.....30 and July 1
Bath and West of England ..8 to 12		

#### TRADE CATALOGUES RECEIVED.

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Descriptive Catalogue of Florists' Flowers.*

M. H. Merriam, Belvidere Greenhouses, near Centre Depot, Lexington, Massachusetts.—*List of Exotics and Floral Novelties.*

#### TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (T. V. Hill).—We do not know who publishes now those you mention.

SHRUBS, &c., FOR COVER IN A WOOD (M. H. M.).—*Berberis Aquifolium*, and where not much shaded, *Berberis Darwinii*, *Aucuba japonica*, Tree Box, Common Holly, Evergreen Privet, Butcher's Broom, Spurge Laurel, and Periwinkles, especially *Viola elegansissima*, near the paths. The flower you enclosed is *Scilla campanulata*. Any florist could obtain it for you. It is a native of Spain and Portugal.

ARRANGEMENT OF FLOWERS IN A BORDER (Kildare Subscriber).—The effect of a border chequered with bold bright diamond-shaped masses of colour in the way you propose would be exceedingly glaring and offensive more especially in such a situation. Do not divide the border by a central

path, but throw it all into one piece, filling the centre with a mass of deep rich scarlet Geranium surrounded by an edging of four broad bands; the outer one of Golden Pyrethrum, followed by blue Lobelia, pink Verbena, and Cerastium, which would afford a pleasing piquant combination of soft fleecy yellow, deep blue, pink, soft grey, and deep scarlet. Plant the bands thickly, so that each may present a compact clearly-defined line of colour, and take care that each line be kept distinct throughout the season.

**PRIMROSE (S.).**—It is not at all unusual for what are called or thought to be Primroses to throw-up a scape as the season advances and become a Polyanthus. Such plants are not true Primroses, but cross-breeds with the Polyanthus. True Primroses like the single and double white, the double lilac, double purple, double crimson, single red, and many others, never throw up a scape. Such a flower as you have sent, if it preserved the Primrose character, would have been worth preserving, but having become a Polyanthus it has no novelty about it. We have seen some flowers highly esteemed as Primroses which, when they became Polyanthus, lost all their value.

**RAISING VARIETIES (Truly a New Beginner).**—You may raise new varieties of fruits simply by sowing their seeds and stones, but the probability is that not one so raised will equal in quality established old varieties. Those who understand the merits and deficiencies of fruits and flowers diminish the chances of failure by applying the pollen of one variety to the pistils of another variety. We do not know where the variety you mention can be obtained yet; it will be advertised, probably.

**BEETLE DESTROYING PEAS (E. H. O.).**—It is the spotted weevil, *Cureulio macularius*. Try sprinkling soot thickly over the leaves whilst the dew is on them, and cover the surface of the soil with soot.

**ROYAL MUSCADINE VINE AGAINST HOUSE (F. J.).**—The upright comes from the rod at the base of the wall should be 2 feet, or better 2 feet 6 inches apart, and instead of pinching back the shoots, not "laterals," between these they should be rubbed-off, except one in the centre of each, and the intermediate one should be stopped at the sixth leaf. The laterals are shoots that proceed from the growths of the present year, and those you may stop at the first leaf, and at every joint as fresh growth is made. What is the information you seek respecting the Black Hamburgh in the ground vine?y?

**MULCHING AND GUANO FOR ROSES (Idem).**—It is too early to mulch roses with spent hops. The end of May or early part of June is early enough, unless the weather be unusually dry, which it hardly will be in your climate, but your soil being very porous you may apply the mulching earlier than would be necessary in a stiff soil. Before putting on the mulch you may sprinkle guano around each tree at the rate you name, but, unless moist weather, it would be better to give it in a liquid form, and not so strong; 1 oz. to a gallon of water is sufficient.

**GOOSEBERRIES AND BLACK CURRANTS UNFRUITFUL (R. H. F.).**—Your friends may advise you aught; we do not think so. The bushes having only a few leaves at the points of the shoots must have had the buds removed by birds, probably bullfinches. There is no kind of Gooseberry bud or fruit that birds will not take. The only thing you can do is to improve your unfavourable soil. We presume it is well drained; if not, it should be, and we should then add to it some road scrapings, ashes, and other materials calculated to lighten it, and manure well. By these means, and keeping the birds from taking the buds, you will probably have fruit in a year or two abundantly.

**ACUCUA JAPONICA BERRIES (J. D. D.).**—Separate the seeds from the pulp or husk, as you're will be if dried, and sow them at once in a compost of three parts turfy loam, and half a part each of leaf soil and sandy peat, with a sixth of silver sand, in a pot or pan efficiently drained. Cover them about half an inch deep with fine soil. Place in a greenhouse or frame, and keep moist.

**DEPTH OF WATER FOR WATER LILIES (J. A. C.).**—The depth of water should not be less than 1 foot, and must not exceed 3 feet; the mean of these depths we consider most suitable, or 2 feet.

**HYBRID PERPETUAL ROSES FOR AUGUST (An Amateur).**—The Rose should be pruned at the end of May, letting the shoots from the points grow in the meantime, and this will keep the eyes at the base of the shoots dormant, after which shade from sun by an awning, and sprinkle overhead twice daily until they have broken, then remove the awning, and keep well supplied with water during dry weather.

**SUPERLATIVE PEA FOR AUGUST (Idem).**—It will be about sixteen weeks from the time of sowing till the pods be fit to gather, therefore arrange accordingly.

**LAWN MOSS (A Constant Subscriber).**—Lime and soot are good applications, the latter especially, as from its encouraging the growth of the grass the moss is overpowered. It may be applied now in showery weather; one peck per rod (304 square yards), is a good dressing. If very mossy we should scratch the lawn well with an iron rake so as to remove the moss, and when this is done apply a dressing of lime compost. This may consist of nine parts of rich compost-refuse of any kind that has been laid-up and turned over until decayed, mixed with one part of lime a few days before application to the lawn, on which it may be placed from a quarter to half an inch deep. Afterwards well rake the lawn, and clear off any stones or rubbish. Sow over it, with an early prospect of rain, in April or May, 6 lbs. *Festuca duriuscula*, 8 lbs. *Cynodon cristatus*, 4 lbs. *Poa nemoralis sempervirens*, and 8 lbs. *Trifolium minus*, for one acre. After sowing roll well, and for a few times do not mow very closely, keeping well rolled.

**BIGNONIA RADICANS CULTURE (Lady Jane).**—It blooms on the short stubby shoots that appear from the well-ripened wood or shoots of last year. Cut away all the weak and unripe wood as well as thin-out the old, avoiding overcrowding, training in the shoots of this year evenly over the wall, and so that each may have air and light. They will only need to have their unripe parts removed in the following spring, and from them you should have flowering shoots, which are best hanging loosely; the only pruning they require is thinning-out, shortening, and regulating, always leaving firm well-ripened wood of last year at the spring pruning for flowering shoots to issue from. If by "highly dressed" you mean top-dressings of rich compost, we may say that it and all plants against walls are benefited by these, as also frequent syringing in the evenings of hot days, and liberal supplies of water in dry weather, but syringing ought not to be longer continued than the early part of August.

**PLACING CUT CAMELLIAS (H. B. M.).**—The plants should be kept under glass until the flower buds are set, and may then be placed out of doors where they will be sheltered from winds, and shaded from sun from 9 A.M. to 5 P.M. We do not, however, advise their being placed out of doors, rather keep them under glass, shaded from sun; but as you have Vines, shading will be unnecessary.

sary. Keep the house well ventilated. The flowers are produced from the points of the shoots; to stop the shoots, therefore, would prevent their flowering. During the summer months, or after May, we leave a little air on at night in our greenhouses, and advise it in your case, but not much, as it may lower the temperature too much to allow of the Grapes ripening.

**WHITE AGERATUM FROM SEED—FUMIGATING FERNS (Idem).**—The white variety of Imperial Dwarf Ageratum comes true from seed, and makes nice plants if sown in March, and grown on by bedding-out time. It is a good white bedder. It is now late to sow the seed; but if you sow in heat and prick-off an inch apart when the seedlings have two leaves, growing them on in a frame, you may have plants fit to put out in June, but they will not flower until late in the season. Ferns are to a certain extent injured by fumigation, especially the *Adiantums* when young; but if care be taken to moisten the floor, but not the fronds of the Ferns, and not to fill the house very full of smoke, no injury will result. The best quality of tobacco-pipe only should be used.

**WIRES FOR GREENHOUSE VINES (J. Bayly).**—The wire should be No. 6 gauge, and to each rafter you will need three wires—one immediately under the rafter to train the rod to, and one on each side for the shoots, which should be 9 inches distant. You will need supports for bangers for the wires, and these should be 3 or 4 feet apart, screwed into the rafters, and so that the wires may be 15 inches from the glass. We prefer this, the old-fashioned mode of wiring for greenhouses. The Vines ought not, for plants to do well, to be nearer than 4 feet. The Vine border ought to be composed of the top 2 or 3 inches of a pasture where the soil is a rich light loam, taken off with its turf, and chopped-up rather roughly, in squares say of 4 to 6 inches, and to eight parts of this add one of old mortar rubbish from an old building, and half a part each sandstone, in pieces from the size of a walnut to a hen's egg, and charcoal, and to this you may add one-twentieth of half-inch bones, the whole well mixed, and put in 1 foot higher than the intended level. The border should be 3 feet 6 inches deep, and you should have 9 inches to a foot of drainage. It is a matter for you to determine whether you will need to provide drains to the border. An old gravel pit filled-up with loose materials should not need any, but we should nevertheless provide rubble drainage over the whole of the border.

**PRESERVING WOODEN LABELS (Critic).**—We have seen the recommendation to soak the labels in a solution of sulphate of iron, but to preserve the wood is of very little consequence—we, and all gardeners, would hail as a benefit how to preserve the writing on the labels.

**TULIP (F. H.).**—We cannot aid you. Florists' varieties are too numerous and too nearly alike for us to attempt to name them.

**CHRYSANTHEMUM LEAVES DISEASED (R. H. C.).**—We have seen leaves affected as yours are on isolated plants in a collection, but never a whole collection. We attribute it to the check the plants receive after being reported when the operation is not carefully performed, and when water is applied to the roots in large quantities before the roots are again in active growth. This is the case with your plants, or they have received a check in some other way.

**PEACH-TREE MANAGEMENT (G. A. T.).**—Superfluous young wood may be cut out after the fruit is stoned, or even earlier than this. There is nothing to be gained, on the contrary much loss results, from allowing the wood to become crowded. The strongest shoots should be removed. The same treatment apply to wall trees out of doors.

**WALL FRUIT NOT SETTING (A Constant Reader, and J. P., York).**—It is not desirable to root-prune fruit trees when they blossom abundantly. Sprig frosts are most to be feared when trees are in blossom. All the trees named set their fruit freely with us. Governor Wood Cherry is the most abundant bearer in our collection. We fancy the fruit will set this year. If it do not, there must be some local cause of which we are not aware.

**ERECTING A GREENHOUSE (M. H. L.).**—An excellent guide for you will be "Wood and its Uses" by P. B. Eassie. It is published by Eassie & Co., Gloucester.

**ACUCUA JAPONICA BERRIES SOWING (Scybor).**—Separate the seeds from the husk and pulp, and sow them in pots or pans of light loam with a little leaf soil and sand, covering them about half an inch deep, and place them in a frame or greenhouse, keeping moist. The plants may appear in about six weeks, and sometimes they do not come up until the spring after sowing. They require to be kept safe from frost.

**ROSEMARY OVERGROWN (Rollo).**—If the plant is bare at the bottom, without any green parts, it is likely that if cut-in very closely it would not again grow. If you can cut it back leaving some green parts, well; otherwise it would be desirable to put in some slips in light soil in a sheltered border, and when these were rooted you might cut-in the old plants. If it die, replace with a young plant, which should be cut-in annually so as to be compact. Dr. Hogg in his "Vegetable Kingdom," page 577, writing of Rosemary states, "As a medicine Rosemary is tonic, exciting, stimulates the nervous system, cordial, cephalic, and promotes the circulation. It is considered serviceable in vertigo, hysteria, headaches, hypochondria, paralysis, humid catarrh, and all the affections of debility, as certain chloroses, leucorrhæas, and also as an emmenagogue. It is sometimes used in the form of snuff, or mixed along with other herbs for the same purpose. The whole plant is employed as a condiment; powdered, it serves many purposes in confectionary, and to form fragrant packets for perfuming wardrobes and clothing." It is a good bee-flower.

**WATER TANKS CORRODING (Idem).**—Your tanks when dry should be thoroughly scraped and rubbed, clearing away all the rusty parts of the iron, and painted three or four coats with red-lead paint, allowing each coat to dry thoroughly before putting on the other.

**STRAWBERRIES FOR ORCHARD HOUSE (Idem).**—Your house having Vines will be too shaded for the growth of Strawberries in pots on the borders. Besides, if the house is closely planted with Vines, neither Strawberries nor fruit trees in pots will succeed. You may have shelves so contrived that the plants of Strawberries will be about 1 foot from the glass, and on these you may stand the pots now. It is not too late, though the plants are showing their flower trusses. Good kinds are Sir Joseph Paxton, President, and Dr. Hogg. Cockcomb and British Queen are good.

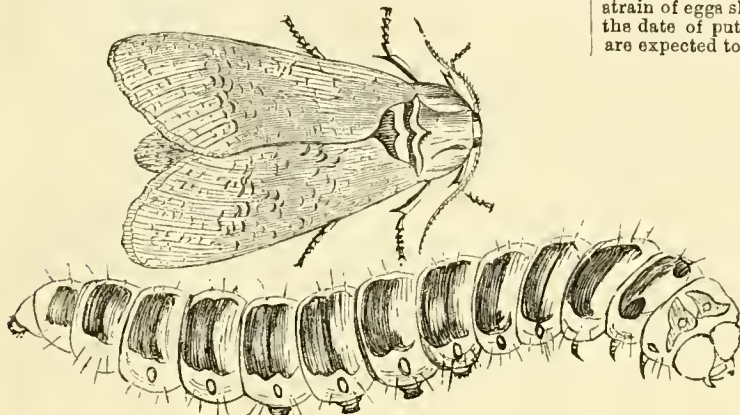
**DRYING ANEMONES (G. S.).**—There is the advantage of having the ground for other things, and the growth is so retarded that they do not flower nearly so early, and so escape frost. The chief thing with Anemones is to ensure for them a season of perfect rest of not too long duration, October being the time indicated by Nature; but if planted then, it is necessary to afford protection from frost in winter; and if planted in January, or as early in February as the weather permits, protection will not be necessary, but the flowering will be later. A. fulgens is best left in the ground, but may be taken up and dried, as it is apt to start into growth too early, which the taking-up prevents.

**PLUNGING MATERIAL FOR PROPAGATING CASE (F. L.).**—It will answer to stand the pots on the slates, the heat being regular. The only advantage of plunging material is to secure uniformity of heat and moisture in the pot. Sawdust is a good material for plunging; it may be kept moist by pouring water between the pots, or if put in moist it will remain so a long time. Sand is not good; sifted ashes afterwards washed are better.

**SUMMER-PRUNING PEAR TREES, &c. (Idem).**—It is best to pinch them as they grow, and not allow them to remain until June to make a strong growth, and then shorten them to three leaves. The object of summer pruning is in that case defeated. After the first stopping keep them to one leaf, except the main shoots, which should be stopped to six leaves, and afterwards to three leaves. The Plum trees are too liberally treated. Lift them as soon next autumn as the leaves begin to fall, and plant again. Continue this annually, and they will soon be remarkable for their fertility.

**VINES INJURED BY PARAFFIN (A Constant Reader).**—We have not experienced any injury from the application of this to trees in a dormant state, if used with care of the eyes, but in some cases injury may result when the paraffin reaches the buds or eyes from their outer scales being rubbed off. We think that the weak growth is a consequence of some injury to the roots, probably in the removal of the soil. Keep them moist, and sprinkled with water twice daily. Unless there be something more than the paraffin, we are unable to account for the shoots dying-off after breaking and growing.

**CATERPILLARS DESTROYING BIRCH TREES (W. Collier).**—They are the offspring of the Goat moth, and we give a full description of the parent and the caterpillar that you may make war upon them, for the caterpillar is most destructive to the wood of fruit trees, though the Elm, Oak, Willow, Poplar, and Walnut also are liable to its attacks. It is the *Cossus ligniperda*.



*Cossus ligniperda*.

The caterpillar measures more than 4 inches in length, is smooth and shining, beset only here and there with single short hairs. It is dark red on the back, and the breathing-holes, situated at both sides, are of the same colour. The sides and lower part of the body are flesh-coloured; the head is black, the first segment also marked with black above. After remaining more than two years in the larva state, and casting its skin eight times, the caterpillar becomes of a light ochrish-yellow hue shortly before becoming a chrysalis, which usually takes place in spring, when it makes a strong cocoon of chips of wood and small pieces of bark which it has gnawed-off. The chrysalis is yellow, and the segments are deeply indented and capable of much extension; its back is furnished with strong pointed spines, sometimes of a reddish brown colour. The cocoon is situated immediately within the opening in the tree, so that the pupa, when arrived at maturity, can press itself half out of the hole when the shell bursts, and the moth comes forth usually in the month of June or July, after having reposed in the pupa state for an indefinite time. When at rest the wings are folded together over the back in the form of a roof; it sits quietly in the daytime on the stems of trees, and is difficult to be distinguished on account of its grey colour. Its wings measure, from one tip to the other, nearly 3 inches, and many specimens more than this. The female is usually larger than the male. The forewings are ashy white, clouded with brown, especially across the middle, and marked with very numerous streaks like net-work; the hind wings are brown. Thorax ochrish in front, pale in the middle, with a black bar behind. The female is provided with a strong egg-depositor, with which she introduces her eggs into the bark of the tree—often a thousand in number, the young caterpillars living at first in and between the outer and inner bark, and afterwards, when they are stronger, penetrating into the wood. When the existence of one of these creatures is detected in the trunk by its excrement, relief comes too late for the tree, even if we are able to kill the caterpillar, the mischief being already done. Notwithstanding this, the caterpillar should never be left undisturbed, and an attempt should be made to reach it by enlarging the opening with a garden knife, or endeavouring to kill it by thrusting a piece of pointed wire up the hole. It is called the Goat moth from the peculiar small both of the insect and its larva. (J. Woolwright).—Your Elm must die; it is attacked by the caterpillar described above as destroying the Birches.

**DOUBLE POLYANTHUS (G. Boothby).**—Your double Polyanthus is a valuable acquisition, and very pretty. It is quite new among the double varieties of that charming plant.

**NAMES OF FRUITS (F. Smith).**—No. 1, London Pippin; 2, Birmingham or Stone Pippin.

**NAMES OF PLANTS (An Amateur).**—No. 1 is *Cydonia (Pyrus) japonica* princeps, a very beautiful flowering shrub; No. 2 is, we think, *Ornithogalum aureum*. (G. Crick).—*Forsythia viridissima*. (E. J. E.).—*Fritillaria meleagris*. (C. W.).—The purple is *Polygala grandiflora*. The other specimen too imperfect. (R. M.).—*Podophyllum peltatum*. The evergreens appear to be both varieties of *Quercus flex*. (E. D.).—1, *Viburnum Opulus*; 2, *Lonicera Xylosteum*; 3, *Kerria japonica*; 4, *Amelanchier vulgaris*. (O. O.).—1, *Eschyanthus maculata*, Bot. Reg., xxviii., t. 23; 2, *Alonsoa* sp. (E. P.).—An

*Amaryllis*, probably *A. Regine*. (O. M.).—Flowering plants indeterminate. Ferns next week. (Scybor).—*Ornithogalum nutans*; *Ceanothus floribundus*. (I. C. W. D.).—*Amelanchier vulgaris*. The variegated Violet is not common. (Alma).—1, *Rivina levis*. Remainder unnameable.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### FORCING POULTRY.

We give each hen a clean roomy box, and put in 4 to 6 inches of moist earth; if cold weather, a woollen cloth over the earth, and a good nest of fine and coarsen hay well shaped, then our eggs, from seven to fifteen, according to size of hen and temperature of the weather. Small hens the fewest eggs, and if weather and place where set are cool but few eggs; then take a hen that has the sitting fever well on, and we are sure will sit well, and put her on to the nest of eggs, put-up our front door and fasten it, and we know that the steam will not get too high or too low in this our natural incubator.

All we have to do now is to take off our hen twice a-day to eat, drink, wallow, &c., and put her back a few times. Most hens will learn to go on to the right nest themselves in a few days.

When we sit a hen she is named, and her name and the strain of eggs she sits on are registered in our sitting-book, also the date of putting under the eggs; twenty days after, the eggs are expected to begin to hatch.

Some responsible person sees the eggs twice every day, and if one gets broken or cracked, it is known immediately, and it is removed.

It is very important to keep the eggs clean. If the surface gets coated in any way it will interfere with the process of hatching.

After the eggs have been sat on a week they are looked over by placing them in a tester, made by sticking a piece of looking-glass on to the bottom of a paper box inside, and then making holes in the cover to set eggs in, small end down, and a hole in one end of the cover to look into; the reflection on the glass will show the condition of the egg. If any of the eggs are not going to hatch, they are taken out and good ones put in their place. Eggs from some cause get their shells cracked quite often.

If eggs have been sat on five or six days and are alive, if a strip of paper a little wider than the crack be covered with mucilage and stuck over the crack the egg will hatch just as

well, if the membrane under the shell is not broken. Care must always be taken to have one-half at least of the original shell unbroken and clean.

When a chicken hatches it is taken away from the hen, marked with its particular strain-mark, and placed in a clean box in a temperature of 100° to 103°; the bottom of the box covered one-half with clean sand, suitable for the chicks to eat, and the other one-half with flannel. We put a pane of window-glass in the side of the box where the sand is, so that the sun can shine in, and stretch a cat's skin, tanned with the fur on, or some similar substance, loosely over the other end, just high enough so that the chickens can stand up nearly straight under it. Flannel will answer very well for a mother. We cover the end the mother is in with slats, and the other end with wire netting that sets down over two sides and the end an inch or more to hold it down, and have a mother at the expense of 50 cts. that will accommodate from twenty-five to fifty chickens for two or three weeks, as a night-room, letting them run out in small runs in the daytime.

We calculate to have from fifty to 150 chickens hatching at the same time, so can have a mother full of one strain; but it makes no difference, for they are marked before putting together. We mark with a darning-needle and white yarn, and sew it through where we want our mark, in wing-web, toe-web, or any other place, and tie the yarn loosely, cutting it quite short. By the time the yarn comes out there is a hole that will never close up.

Chickens need only heat and gravel for the first twelve hours, and then they will begin to pick food. We feed with the yolks of eggs boiled hard, and mixed with indian cakes baked hard and pounded-up fine (the first twenty-four hours they only need clear egg-yolks and sand), about one yolk to a gill of fine cake. Feed often and what they will eat-up clean. When they are about thirty-six hours old they will drink water or milk; we give milk to drink, and mix our cakes with new milk. We increase our egg-feed, putting two yolks to a gill in course of a week, and six egg-yolks to a pint at one week and a half, and begin to feed cracked and whole wheat once or twice a-day. At two weeks old we begin to feed with boiled meat, and drop our egg-feed, but continue our pounded cake once or twice a-day till the chicks are four weeks old, then use cracked corn as the bulk

of our feed after the chicks are four weeks old—feeding with boiled meat two or three times a-day. We riddle cracked corn, feeding with the coarse part dry, mixed with wheat, in the afternoon; and the fine, mixed with coarse shorts, scalded together, in the morning; change once in a while if chicks tire of the regular feed. We feed a good many boiled potatoes with corn-meal and wheat middlings mixed, by mashing the potatoes, meal, &c., together while the potatoes are hot. We find boiled rice a cheap and very desirable feed to change with. One pound of rice will take in 6 lbs. of water, and makes a good feed for fifty hens. At four weeks we separate our cockerels and pullets, putting twenty-five to fifty together into a run 10 feet long, 3½ feet wide, and 2½ feet high, made of narrow boards, with lathe nailed on three-fourths of an inch apart, on sides, one end, and top.

We use large boxes or small moveable houses for the chickens to roost in and run into in rainy weather, and keep these roosting-rooms clean and well littered, making the chickens sit on the ground, or wide roosts, till they are four months old, as roosting on small sticks will crook their breast-bones. After the chickens are two or three weeks old they will begin to eat green food, grass, oats, clover, cabbage, mashed mangold wurtzels, onions, potatoes, &c. Our great study is to make them comfortable and furnish them some exercise to keep their appetites good.

Chickens grown and cared for in the above manner will weigh as much at three months old as, if running about, they would do at six months old; and pullets will begin to lay at three to four months old raised our way. (I am speaking of Brown Leghorns.) I do not think White Leghorns or Light Brahmas could stand the confinement. Partridge Cochins do very well, and begin to lay when about five months and a half old, and my Worcester county pullets commence laying at four to five and a half months old. The cockerels are fit to kill at about the age the pullets begin to lay. Brown Leghorns hatched in March are fit for broilers in June, and will dress 2½ to 3 lbs., and sell in our market at 60 to 75 cts. per pound, and there never is one-tenth as many as would sell at those prices.

Some people will say chickens raised in this way cannot be strong and well. I will say that we seldom have a sick fowl, and have hens five to seven years old on our yards that are good layers now and are perfectly well, that have never run out a day in their lives, and have been constant layers.

I do not approve of forcing all kinds of fowls, or of all the fowls on the yards of any variety, for we can grow a better exhibition bird by a slower process, especially of the large-combed varieties, as forcing tends to make the combs and wattles grow too large and out of shape. Leghorn pullets will be larger if they do not begin to lay until they are five or six months old. I prefer to choose my breeding-stock out of my runs that have been forced for eggs two or three years, taking the largest and strongest hens that lay the largest and best-formed eggs, and mate them with cockerels from six to ten months old that have never run with pullets or hens. My exhibition cockerels I let run with pullets and hens all I can safely—and do not have them picked. Now that good breeders can get from \$10 to \$100 each for exhibition birds of any of the popular varieties they chance to make a speciality of, it pays to take considerable pains to breed them.

I will say here, for the benefit of those who are constantly questioning me in relation to the matter, that my Brown Leghorns lay constantly (except when they are moulting), after they commence, summer and winter, and if they are in good condition the cockerels and cocks will not freeze their combs or wattles until the mercury falls to 10° above zero, or the pullets or hens until the mercury falls to zero. Still I do not believe it pays to let the mercury fall much lower than to 45° or 50° above, in the poultry house, or rise much above 75° except in the small chicken-rooms, where it should be kept at 100°.—FRANK J. KINNEY.—(*American Pet-Stock Bulletin*.)

## LIABILITY OF RAILWAY COMPANIES FOR EXHIBITION POULTRY.

STEPHEN *versus* THE CALEDONIAN RAILWAY COMPANY.

At the Quarterly Sheriff Small Debt Court held at Blairgowrie on the 11th, Mr. A. Stephen, draper, Blairgowrie, and Secretary to the Blairgowrie Poultry Society, claimed £6 from the Caledonian Railway Company, being the value of a pen of Dorkings which, along with others, had been given in charge of the company at Meigle Station, and which the defenders had failed to deliver. The company denied receipt of the hamper containing the birds. The evidence proved that the fowls, along with other five pens belonging to Mr. Stephen, were exhibited at the Meigle Poultry Show on the 20th of August last, and were being returned to Blairgowrie. Several witnesses proved that the hampers containing Mr. Stephen's poultry had been taken to Meigle Station, and left on the platform there at the request of a porter. The company denied receipt of the missing pen; but

from the evidence of a railway guard it was shown that eleven hampers—the same number that had been sent away from Blairgowrie—had been received at Coupar-Angus Junction, and from thence taken to Blairgowrie. The Sheriff thought that the senders had acted somewhat carelessly in the way they had left the fowls at Meigle Station; but as it had been proved that the proper number of pens arrived at Coupar-Angus, he held that receipt by the company was established, and decided that the company were liable. After evidence of the value of the birds, the Sheriff awarded £4 with costs to the pursuer, remarking that the price was a fancy one, but that the birds were fancy also. Other cases were held over, awaiting a decision in this one; therefore we may expect to hear of more damages being awarded to exhibitors whose fowls are lost or delayed in their transit either to or from an exhibition.

## APOPLEXY IN FOWLS.

THERE is no disease so liable to affect the thriffter and more precocious specimens of our thorough-bred fowls, which have been well fed and kept in close yards, than apoplexy; and while it does not necessarily prove fatal in all cases, it cripples our efforts in producing the best specimens of the flock. It is an affection of the brain, and is attended with congestion of the whole cerebral mass, including the spinal marrow. The fowl becomes suddenly disabled, walks with a tottering gait, falls down, tumbles over, and is some minutes in recovering an equilibrium, soon to be lost again. The inclination of the head is low, the legs much flexed on the body, and trembling; the wings droop, the plumage is rough, and great listlessness attends the whole system. The appetite, however, is generally good until the last days of the disease, when the victim sinks down and dies in a state of exhaustion and great emaciation.

*Treatment.*—The first thing to be done is to place the fowl in the open air, where it may have plenty of exercise and green food. Scarifying the comb and wattles, thereby abstracting some blood locally, has had a good influence. But the remedy on which I rely chiefly is the bromide of potash, in ten-grain doses (to an adult cock), three times a-day. This has succeeded when everything else has failed. One of my Houdan cockerels lingered for several weeks in a most hopeless condition, nothing being of any avail until I adopted the use of the bromide of potash, when he suddenly commenced improving, and is now one of the most vigorous cocks of my yards. I have also a Buff Cochins cockerel which has been suffering with the same malady; and but for the timely use of the bromide of potash I am sure I should have lost him. I offer these facts for the benefit of those engaged in rearing poultry, and am satisfied that it is capable of accomplishing great good in the treatment of this disease. My mode of administering the remedy is in the solid form; and, as it is not poisonous, there is no danger in the free use of it.—(*Poultry World*.)

## THE ROYAL DUBLIN SOCIETY'S SPRING SHOW.

THE above-named Show was held in the Society's Exhibition Hall, Kildare Street, Dublin, on the 21st and following three days. A considerable reduction on the amount of prizes offered last year had been made; the consequence was that few English birds put in an appearance, and the entries were not nearly so numerous as we have seen them. There were, however, about 240 entries in twenty-nine classes.

Silver-Grey *Dorkings* headed the list, and were such a class as is rarely seen on this side of the Channel, scarcely one had bird being shown, and the winners could not be easily excelled. Dark *Dorkings* were bad, but of *Spanish* some good birds were shown. The first-prize pen, which were in the highest condition, consisted of a cockerel very deep but narrow in the drop, with a moderately good hen; the second-prize hen, which was much better, and the cockerel broader but somewhat shorter, lost entirely from want of condition. Both winners in *Light Brahmas* were good in all respects excepting that the cocks were tinged with yellow. The class was better than we have generally seen here. Dark *Brahmas* had fifteen entries, among which we noticed many good cockerels, the hens not proving nearly so good. Buff *Cochins* were one of the best classes at the Show, large, broad, high-coloured birds leading the way, while some excellent *Lemons* received very high commendations. The first-prize Partridge-coloured contained a most perfect hen as regards both style and marking, and a cockerel perfect in shape and excellent in colour; the second-prize pen being aged birds, large and rather dull in colour. *Cochins*, any other colour, were *Blacks* of fair quality; the first-prize hen was exceedingly good for that variety. *Game* were very poor in both classes, but the first-prize Silver-pencilled and both winning pens in *Spangles* were good. Gold and Silver *Polish* were but poor, though two very good pens of White-crested *Black* were shown. *La Flèche* were moderately good, while the *Houdans* were very good, the winners having the proper comb for that variety. In the *Variety* class good *Malays* stood first, with *Black Ham-*

burghs second. A pair of large, coarse-looking French fowls called Du Mans, was likewise shown. The Selling class for a cock and two hens contained thirty-eight entries, but as there was no restriction as to price some capital pens were entered. First came La Flèche, second Buff Cochins, and third Dark Brahmas. The same remarks will almost apply to the Single cocks, but in this case a Malay was first, a Brahma Pootra second, and a Lemon Cochins third. The winners in both classes of *Bantams* were good and shown in nice order. *Turkeys*, cock and hen, were an exceeding good class; the first-prize pair, of the Cambridge variety, were large and high-coloured.

In *Geese*, Toulouse were first, and White Embden second. A grand pen of Rouen Ducks were shown by Mr. Mulligan, of Belfast, while in Aylesbury both pairs of winners were in fair condition for the time of the year.

**DONKEYS.**—*Silver-Gray*.—1, S. Mowbray, Killeary, Monrath. 2, Miss A. M. Warburton, Kill. Straffan, Co. Kildare. *hc*, Miss A. M. Warburton; G. N. Furdon, Lisnabin, Killecan, Co. Westmeath. *c*, R. P. Williams, Glaslinn, Clontarf; J. C. Cooper, Limerick; Mrs. R. Sargent, Waterloo, Cahir, Co. Tipperary. *Coloured*.—1, J. C. Cooper. 2, Miss C. Stephens, Greenwood, Co. Dublin. **SPANISH.**—1, J. A. Smyth, jun., Londonderry. 2, W. G. Mulligan, Springfield, Belfast. *hc*, Miss De Conroy Drevay, Newtown Park, Blackrock, Dublin. **BRAHMA POOTRA.**—*Light*.—1, J. Forrest, Nu lmore, Milltown, Co. Dublin. 2, D. Sullivan, Blackrock. *hc*, Mrs. Forrest, Nullamore, Milltown, Co. Dublin. *c*, L. F. Perrin, Chantilly, Loughinstown, Co. Dublin; A. Field, Blackrock. **DARK.**—1, Mrs. Taaffe, Foxborough, Tulse, Co. Roscommon. 2, Mrs. R. Sargent. *hc*, L. Stoney, Dublin. *hc*, Miss A. M. Warburton; J. C. Cooper; Miss C. Stephens; W. G. Mulligan.

**COCHINS CHINA.**—*Buff or Cinnamon*.—1, Mrs. Taylor, Ardgliss Castle, Balbriggan. 2, J. J. Hutton, *hc*, D. Sullivan, Blackrock, Dublin; W. G. Mulligan; F. W. Zurichst, Bellevue, Donnybrook, Dublin. *hc*, L. Stoney; C. J. Carroll, Cappoquin, Co. Waterford. *c*, M. Mahony, Baldoye, Co. Dublin. *Partridge or Brown*.—1, W. G. Mulligan. 2 and *c*, J. K. Mullner, Cherbury, Blackrock, Co. Dublin. *hc*, M. Mahony; R. P. Williams. *Any other variety*.—1, T. A. Bond, The Colons, Londonderry. 2 and *hc*, Mrs. Taaffe.

**GAME.**—*Black or Brown Red*.—2, J. A. Farrell, Moynalty. *hc*, J. C. Cooper. *Any other variety*.—1, J. C. Cooper. **HAMBURG.**—*Penitell*.—1, S. Mowbray. 2, W. G. Mulligan. *Spangled*.—1, S. Mowbray. 2 and *hc*, L. Stoney. *c*, L. A. Beamish, Ammount, Glounthaun, Co. Cork; J. C. Cooper.

**POLISH.**—*Gold and Silver*.—1, L. A. Beamish. 2, J. K. Mullner, *hc*, R. P. Williams. *c*, J. Harlow, Castlecock; J. C. Cooper. *White-crested Black*.—1, Miss De Conroy Drevay. 2, J. C. Cooper.

**LA FLÈCHE.**—1, J. C. Cooper. 2, Rev. N. J. Ridley, Newbury. *hc*, Miss L. Stephens; F. W. Mulligan. 3, J. C. Cooper. 2, J. C. Cooper. *hc*, J. C. Cooper; C. McGlinn. *c*, L. A. Beamish.

**ANY OTHER VARIETY.**—1, J. C. Cooper (Courts Pate). 2, S. Mowbray (Black Hamburg). *hc*, J. C. Cooper (Sultans); C. Reynolds, Baldoye (White Dorkings). *c*, J. C. Cooper (Malay); Rev. N. J. Ridley (Malay).

**SELLING CLASS.**—1, Miss L. Stephens. 2, M. Mahony (Brown Cochins). 3, R. W. Boyle, Dultown, *hc*, D. Sullivan (Dark Brahma Pootra). *hc*, Mrs. Taaffe (Partridge Cochins and Dark Brahma); S. Mowbray (Dorking). *hc*, G. A. Perrin; W. H. Twamley, Bockfield, Ballytoe, Athy (Dark Brahma Pootra); J. Bollywe, Dublin (Spanish); R. W. Boyle (Dark Brahma Pootra); W. G. Henry, Oaklands, Sandymount (Spanish) (2); Miss A. Harvey, Wilford, Bray (Black Spanish); J. K. Mullner (Partridge Cochins); Miss C. Stephens. *c*, Mrs. Taaffe (Game Fartams); G. A. Waller, Nenagh (Buff or Cinnamon Cochins China); J. Halloway (Spanish).

**SELLING CLASS.**—*Any breed not previously entered.*—*Cocks*.—1, J. C. Cooper. 2, T. M. Billard, Clontarf (Brahma Pootra). 3, Mrs. Taylor (Buff Cochins China). *hc*, J. C. Cooper; J. M. Harvey, Wilford, Bray (Crève-Cœur). *hc*, G. A. Perrin (Dark Brahma); Miss Mahony, Baldoye, Co. Dublin (Cochins); L. Stoney (Partridge); Mrs. Taylor (Buff Cochins China). *c*, W. M. A. Wright, Branganza, Dalkey; G. Andrews, Blackrock (White Cochins); S. Mowbray (Dorking).

**BANTAMS.**—*Game*.—1, Miss L. Stephens. 2, W. G. Mulligan. *hc*, G. Knaggs, Rathmines. *c*, J. C. Cooper (2); G. Knaggs. *Any other variety*.—1, Miss C. Stephens. 2, Master M. Hilliard, Clontarf. *hc*, Mrs. H. Hutchinson, Seafeld, Donabate, Co. Dublin; J. C. Cooper. *c*, W. G. Mulligan.

**TURKEYS.**—1, Rev. N. J. Ridley. 2, Miss L. King, Gaesbill. 3 and *c*, J. C. Cooper. *Cock*.—1, J. C. Cooper. 2, J. F. Bonford, Drumlagan, Garadice, Kilcock. *hc*, Mrs. M. Manns, Gowra, or Jerryab, Co. Cavan; Miss L. King; Hon. Mrs. Preaton, Rathfriland, Co. Meath; J. C. Cooper. *c*, J. C. Cooper. **GEES.**—1, R. P. Williams. 2, J. C. Cooper. *hc*, J. C. Cooper. *Miss L. King*, *c*, J. C. Cooper (2); J. Lentaigue, Tallaght, Co. Dublin. *Single Gander*.—1 and 2, J. C. Cooper.

**DUCKS.**—*Rouen*.—1, W. G. Mulligan. 2, J. C. Cooper. *hc*, Mrs. Taaffe; R. P. Williams. *c*, R. W. Boyle, Aylesbury. 1, R. P. Williams. 2, J. C. Cooper. *hc*, S. Mowbray. *Single Drakes*.—1, S. Mowbray. 2, Mrs. T. W. Webber, Huntingdon, Portlinton.

**JUDGES.**—Mr. E. Hutton, Pudsey, Leeds; Mr. C. F. Stannton, Springmount, Newton Mount Kennedy; and Mr. W. G. Merry, Blesinton.

## LAW AND ITS CONSEQUENCES.

A TURKEY snit in Windsor Co., Vermont, excited considerable interest in that section. Two farmers occupying adjoining farms had each a flock of Turkeys, one flock numbering twenty-five and the other ten. The Turkeys were in the habit of running together, the smaller flock inclining to stay with the larger. During the latter part of the season the owner of the larger flock had occasion to shut up his Turkeys, and as the others were with them he shut them up also, and then sent word to his neighbour to come and get them. He came and demanded his ten Turkeys, but the other claimed that that was five more than his number. Two of the Turkeys were recognised by both as belonging to the smaller flock, and these the owner of the larger flock was willing to give up, with three others as good as could be found in the lot. This offer the other declined to accept unless he would let the Turkeys out, and then if the flocks did not separate—his old Turkey taking nine young ones—he would receive the five; but the other refusing to do this, the owner of the smaller flock sued him and recovered ten Turkeys at the Justice Trial at \$1 25 per pair. The other appealed to the County Court, and the jury not agreeing another trial was granted. The original

cause of the snit now became a secondary consideration, and each was striving to have the other pay the large accumulation of costs, amounting to nearly \$300. The jury in the last trial decided that the owner of the larger flock must pay for five Turkeys at \$1 50 a-piece and the costs. In addition to this each had to pay about \$100 for lawyer's fees. These facts should be a warning—at least to persons of limited means—to avoid the law.—(*New York Tribune*.)

## THE MELBOURNE PIGEON MART.

A visitor to the Eastern, commonly known as "Paddy's," Market on Saturday nights sees much that is interesting and characteristic. The first impression is that of a seething purposeless mob, jostling each other in admirable confusion; but when the eye settles down to clear detail, then the wondrous diversity, yet unity of purpose, strikes the mind as something deserving of study. Here we find a coster's lorry filled with scarlet-coloured crawfish barely cold, there another loaded with barracouta dried and smoked, while a third trembles under the weight of flathead and mullet, each proprietor vying as to strength of lungs in disposing of his wares. Along the pavement are wooden shops, where the riches of Pomona are sold at wondrously cheap rates, while in the rear are rows of tables where the lovers of Sydney rock oysters can get their fill at 6d. per plate. Then we come to itinerating rifle galleries kept constantly going by lads improving their sporting proclivities at a halfpenny a shot, the prize for a bull's eye being a handful of Barcelona nuts. Penetrating further into the market, the visitor is regaled with a mixed effluvium arising from cabbages undergoing a state of vegetable perspiration. Cheeses of every quality from the mitey to the mouldy, second-hand boots and shoes smelling of Crispin's wax and dirty feet, perambulating drapers' shops with the peculiar scent incident to confined haberdashery, lean and scraggy mutton, beef that looks pleuro-pneumoniacal, old book-stalls with their musty treasures, stands garnished with John Chinaman's wares, laden with the peculiar odour of the Flowery Land, piles of tinware and heaps of crockery, enlivened by an ever-surging busy crowd, chaffering and buying, and departing heavily laden with the bargains that can here be obtained for ready cash. Outside this commercial babel congregate the dealers in Pigeons. Between the side arcade, where poultry-dealers and bird-fanciers love to congregate, and the market proper, is a dark street where about two hundred lads gather every Saturday night to swap and sell Pigeons. These vary—that is, the bipeds—in age from seven to sixteen years, and all have one, but the majority two or three, feathered favourites to dispose of. Pouters and Dragons, Tumblers and Bronze Tipplers, Skinners, Jacobins, and Commoners are here to be found in every variety, and a brisk trade is constantly carried on by these youthful merchants.—(*New Zealand Illustrated Press*.)

## A FORTUNE FROM FEATHERS.

VERY recently a new invention has opened the way to a new utility, and the wealth of France rests in her wonderful utilisation of even the meanest things. This new thing, which is to give all the country maidens a *dot*, or dowry, is—feathers. The only capital required is a pair of scissors. How much money do you think is annually lost in America by the waste of feathers? Geese, Ducks, Turkeys, hens, and Pigeons lose quantities in one way and another—by accident, moulting, battles, and death. Feathers stick in the mud, on weeds, on branches, and sticks; they lie on the wood-piles, by streams—everywhere one wanders he will find a feather. A feather is almost indestructible. It may be blown from mountain-top into valley and back again, and remain the same beautiful and delicate thing. Well, these wandering feathers that seem so insignificant constitute—or may—veritable riches. Listen:

The down of Geese and Ducks has for a long time been very highly valued, "downy beds of ease" being the incarnation of repose, while the bed-covers of silk lined with down have been, on account of their high price, only enjoyed by the rich. But in Paris "artificial down" has come to be more highly valued than the natural down, because it is much lighter. This is made from feathers of no matter what kind of feathered animal, by cutting the barb of the feather from each side of the quill and putting them (the barbs) in a stout cloth sack, and then rubbing them between the hands as a wash-woman does linen. Five minutes' rubbing will have mixed the mass in a felt-like substance, rendering it homogeneous. That is *édredon artificiel*, and sells in Paris for something over \$8 in gold a-pound, and this price is constantly increasing. But there is something more wonderful still. A process has been invented for making cloth of feathers. To make a square metre (a metre is 3 inches more than a yard) of cloth—cloth vastly lighter and warmer than wool, from 700 to 750 grammes (a gramme is equal to 16 9 grains avoirdupois) of this artificial down. But this feather cloth—*drap de plume*—it takes colour admirably, and is almost unwear-out-able, because, instead of breaking and cutting in the

places most exposed to wear, it mats itself more and more into a felt-like substance. This discovery is one of the most remarkable of the age.

Now for some figures. The estimate has been made that in France alone enough feathers are allowed to go to waste each year to make from 7,000,000 to 8,000,000 square metres of cloth! In other words, as much is lost in France in feathers as is paid for cotton! This being true of France, how much more is it true of the United States? A girl of eight or ten years can see from this how valuable every feather—every one—is, and her chance for money-making, for, if I mistake not, the price paid for down is higher in America than in France, and it finds buyers everywhere. Experiences result in facts, and here is one: The feathers that three-fourths of the country people throw away amount in value to more than twenty cents for each ordinary hen! In fact, a hen's wardrobe weighs usually from 52 to 53 grammes, and sometimes weighs as high as 64. "Don't despise the little things." Feathers mean fortune.—MARY A. E. WAGER, *Paris*.—(*American Paper*.)

## THE QUEEN BEE AND DIFFERING DOCTORS.

MR. LOWE has written a letter professedly to prevent, if possible, inexperienced bee-keepers from being led astray by my views and teaching. I am not in the habit of reviewing my reviewers, or noticing many of the misrepresentations of my meaning and views that appear so frequently in this Journal, but it now appears desirable that I should say a few words in the interests of truth, and therefore for the benefit of bee-keepers, for I have a growing disinclination to notice, or pester others by noticing, the remarks of captious people. I shall confine my remarks to Mr. Lowe.

He says, "The queen bee does not arrive at maturity in fourteen days, but on the sixteenth; and the worker is not twenty-one days in the cell, but it comes forth a perfect bee on the twentieth day." This is exactly like mine—mere assertion. He gives no facts to prove that the assertion is correct. Our mode of artificial swarming has caused me to notice the times of setting and hatching young queens. In nine cases out of ten eggs are not in royal cells when the first swarms are taken from our hives. Shortly after the swarms have been removed the bees left in the old hives commence to search for their queens, and, failing to find them, begin to set eggs in royal cells, or otherwise make royal cells around some worker eggs. Hundreds if not thousands of times have we seen eggs in royal cells that were not there when the queens and swarms were removed. The eggs had been in worker cells and removed by the bees to royal cells. This fact upsets the position Mr. Lowe has taken in asserting that "the bees do not transfer eggs from worker cells to royal cells, as is alleged by Mr. Pettigrew." If Mr. Lowe will visit me in a month or two I will show him scores of empty queen cells as soon as the queens have been taken from them and their hives, and three days later I will show him the same cells occupied by brood being reared into queens. To use his own words, "it is to me a mystery" that he has not witnessed this many times.

When I see eggs in a royal cell I say they will come to perfection in fourteen days, and on going to the hive on the fifteenth day it is found that the queens are ripe and piping for second swarms to go. Sometimes I am one day too late, and find that the queens have come to perfection in thirteen days from the time of setting, and sometimes they are hardly ready; but in nine cases out of ten the young queens come to perfection in fourteen days from the time of setting. There may be a difference in the age of the eggs when set. I have known a difference of two days in the hatching of hen eggs, though twenty-one days is the usual time for them.

Mr. Lowe says that working bees are only twenty days in being hatched; whereas I say twenty-one. Now for proof. The readers of this Journal know that I have again and again advised them to turn the bees out of hives on the twenty-first day after the swarms have been removed from them. We do so in many cases every year, and what do we find? We find if we do it on the twentieth day after swarming all the workers are not hatched, and that those unhatched leave their cells after all the bees have been removed. This I have seen again and again—scores of times; therefore, I prefer my own and others' statement of days to Mr. Lowe's twenty days. In 1870 the late Mr. Woodbury found some young bees hatched on the eighteenth day, but doubtless these were abnormal.

Mr. Lowe wants to know about the trustworthy experiments indicating four thousand and six thousand eggs per day from single queens. These experiments were made by several respectable bee-keepers on the Continent and in America, were stated in the Congress of American bee-keepers two years ago, recorded in the American "Bee Journal," and thence epitomised in THE JOURNAL OF HORTICULTURE.

One point more noticed by Mr. Lowe. He says that "queens are never allowed to do battle, and one of the queens is always destroyed by the bees." My words were, "In most instances the

bees destroy one of them." It distresses me to have to tell Mr. Lowe that the terms he uses are too strong. Queens have met when swarms have been united, and royal battles have taken place. In one of these royal battles which took place in my native village, the queens, in deadly conflict, rolled out of the hive and fought it out on the ground. One was killed and the other wounded.

I was witness to another royal battle in which the two queens were torn asunder before fatal consequences took place. The late Major Munn, of Dover, got twenty-four queens from Mr. Thomas Adley, of Epworth, Lincolnshire, wherewith to illustrate a lecture he delivered last autumn. Several royal battles took place in the presence of his audience, according to the report of a Kentish newspaper which was sent to me.

I have now gone over the salient points of Mr. Lowe's letter, which has not altered my views in the least. He means well, and he is an able man. His letters are always thoughtful and intelligent. If he will kindly produce the evidence of facts in support of his views, he will do something in reality to prevent what he fears—viz., my foundering amid my inexperienced crew in mid ocean. The evidence of one poor stammering witness is entitled to and receives more attention from a jury of Englishmen than the eloquence, coupled with assumptions and presumptions, of the mightiest barrister. The readers of THE JOURNAL OF HORTICULTURE and the bee-keepers of England want information, and this information is most welcome when given in simple form. My sole aim is to impart what I know without the use of a name or a personality. If I fail in my effort, or give offence to anybody, I grieve over it. Traders are highly offended at me for recommending hives not in their trade; but the readers of this Journal most heartily approve of those who think and act for themselves, and recommend the safe roads and sound bridges that have borne them well along for fifty years.—A. PETTIGREW.

## A PLEA FOR WEAKER STOCKS.

AT this season of the year many bee-keepers are in perplexity about some of their hives, which seem to be far behind others in point of numbers. Is it best to join two or more of these, or to take any trouble to save them as distinct stocks? Of course it may be quite useless to attempt to save some hives, as when no pollen is being gathered. We should not trouble in this case even to join the bees to another hive, unless they happened to be very strong in numbers. In this case it would be worth while to fumigate the bees with fusian or brown paper, drive them out, hunt for and kill the queen, if any, and, after well sprinkling the bees with honey or sugar syrup, to join them to the nearest stock, right or left, after sprinkling the latter also in the same way. We should do this towards evening when no marauding bees are about. By morning all would be right again. Hives so treated become very profitable.

But what about other hives, which are evidently active and pollen-gathering, but still weaker than one would like to see them? There are many such cases, as where hives over-swarmed themselves the year before, or swarmed late, or such, as late swarms and casts, that have survived the winter. Now, my own experience has led me to take particular care of these enfeebled stocks, and to treat them generously with moderate but continuous spring feeding, covering them up with warm coats of drugget; and for this reason, that it is often these stocks that turn out the most profitable in the coming summer, yielding the largest weight of honey, or at least furnishing themselves abundantly for another year. This may seem an utter paradox and yet be an undeniable fact.

The explanation is quite simple, and is as follows:—In many years it is almost impossible to prevent the stronger stocks from swarming, and they will do this to excess, choosing, too, the time of all others when honey is most abundant, and when it might be stored to the greatest advantage. Both swarms and stock suffer from these hive-revolutions. The former use-up the honey in making comb, often almost as fast as they collect it; while the latter simply consume the honey that was left by the first swarm—the more of it in proportion to their swarming. It is true, if the season happens to be favourable for the secretion of honey later on, when these stocks or swarms have recovered themselves, they will collect a great deal of honey and do very well; but what if it should happen to turn out otherwise? In this case the more backward hives will often be found to have stored a considerable surplus during the good weeks of plenty, while the others find themselves next to paupers at the close of the honey season. I have known many such instances in my long experience; nor was last year an exceptional season in this respect; indeed, about us, the most honey was got certainly from the less strong hives. In my own case I think I never had such splendid stocks, so crowded with bees; but as these would swarm again and again, do what I could to prevent them, they simply did nothing towards filling my honey jars; on the contrary, I have had to feed them from September till the present time, and such has been my experience oftentimes in

former years. Therefore, let none despise their weaker stocks, but follow the good example of generous treatment which I have set in my own case.—B. & W.

**EARLY SWARM.**—April 23rd, hived a very fine swarm from a common straw hive. The swarm weighed between 6 and 7 lbs. The stock is a swarm of the 3rd of June, 1873, and during the winter was covered with a pan only. The bees received about 6 lbs. of food during February. No drones were seen until the morning of the 23rd, when they made their appearance in large quantities.—W. M. B., *Kingston-on-Thames*.

### OUR LETTER BOX.

**HENS' EGGS SOFT (Rollo).**—The use of the potato in feeding poultry is a failure, inasmuch as it makes only fat and causes liver disease. For laying birds it makes the operation difficult and dangerous, choking the organs with fat. It destroys quality to such an extent, that we believe if the Irish would give it up as an article of poultry food it would make a difference of many thousands of pounds in their favour. Calcined oyster shells amount to nothing; and to cure hens of eating eggs by giving them egg-shells, is like curing a lad of smoking by giving him pipes and cigars. Your fowls cannot find that which is necessary to make shell, and your feeding does not afford it. Are they at liberty, and have they a grass run? If you can get them, give some ground oats; the hull of the oat contains much chalk. Easchew the potato peelings, give some whole barley for a mid-day meal, and ground oats again in the evening. If they have no grass run, let them have daily some large sods of growing grass, cut with plenty of earth, given to them, and put down a good basketful of bricklayer's rubbish. The fact of the eggs being shell-less proves the birds are not in good condition, and the craving for the egg shows a morbid state of the secretions, inducing unnatural appetite. Try to keep your fowls in a state of nature. Pheasants, Partridges, Grouse, Rooks, Plover, the thousand-and-one small birds, lay perfect eggs, and leave every shell in the nest. Take Nature for your poultry book and feeder.

**ROOSTING PLACE FOR A HUNDRED HENS (S. A. C.).**—It would occupy so much space to give you all the information you ask, that we must refer you to some or to one of the many poultry books published, and advertised in our columns. With regard to the roosting-place for a hundred hens, we always prefer, when it can be done, to make two houses, each for fifty. Say two houses 18 feet long by 15 wide, as lofty as you can make them—if 20 feet high so much the better—ventilated at each side close under the eaves of the roof, and well lighted by means of windows that may be open in the summer. One door, in a corner, not in the middle. Perches away from the door, and within 2 feet of the ground. Floor of chalk or earth. Earth, chalk, and clay, well rammed down form a capital floor, especially if covered with some gravel. Boards will make all the upper part, but you may have 2 feet of brickwork on which to rest your timber.

**GROUND OATS (W. H.).**—We are now using ground oats for our chickens, and for ourselves we have compared the sample sent with that we are using; we find them exactly similar. We have no reason to doubt its purity, and have used it many years. We first knew it in Sussex. Few millers can produce it; it requires particular stones, and they want peculiar dressing. Ground oats, as most millers make them, have the appearance, when slaked, of barley meal mixed with hulls or with chaff. I know no food on which chickens do and grow so well. Were it not so expensive we would feed dogs and cows on it. It may, perhaps, be well to say we do not know the Messrs. Marsh; we never saw them, and they never saw us, nor do they know us by name.

**GOOSE'S VENT PROTRUDING (F. Ch.).**—Shut-up the gander for a time. Hang the Goose up by the legs and make a thorough examination of the unhealthy part. Replace anything that protrudes with a wax candle. If there be difficulty, lubricate all the parts with oil; castor oil is best. If there is rupture, causing enlargement of the opening, ascertain whether it is on one or on both sides; wherever it may be, put in a stitch to reduce it to its natural state. After it seems to be cured you may use a solution of alum and water internally with a syringe. Shut-up the bird by herself, and feed on soft food.

**FOOD FOR YOUNG GOSSINGS (E. C.).**—Nothing is so good for goslings as grass; that is probably why so many are kept where there are commons. Oatmeal put in a pan of water is excellent food for them, and it is often wise to add some bran to it. Chickens should have bread and milk, chopped egg, cooked meat cut up fine, crumbs, sods of growing grass, fresh earth, and in bad weather beer.

**DEMERITS OF HOUDANS (J. N.).**—Where only one breed is kept, the objection to Houdans is they do not sit. They will not be kept in by any ordinary fence, and if they are kept in confinement they devour each other's plumage, leaving only wing and tail feathers. We know no other drawbacks. They are hardy, good layers, and good-looking. If you can give them a run they will not pick each other. It is an abominable practice, and at present is confined to Houdans and Spanish. We have known Creve-Coeur do it, but only two. We saw a Cochise pullet in a pen indulging in the luxury, and we condemned her to pie-crust.

**TOY PIGEONS (J. N.).**—Few birds are better breeders than the Toys. They are also very pretty. Any of the large importers of foreign Pigeons can sell some pairs at low prices on account of faults that are almost imaginary. These birds are kept in confinement, and may be depended upon to remain after being shut-in for a day or two. Try Baily & Son, Mount Street. They are the largest importers.

**BELOIAN HARE RABBITS (Amateur).**—Your buck is a Belgian Hare, but rather small. The doe must be a Patagonian, from your description. The Belgian Hare will be treated on in these columns, when the chief points will be described.

**CANARY MOULTING (M. W.).**—It is not usual, but sometimes happens in the spring. Most likely the bird will cast only the body feathers, and possibly only those on the breast. Give it its usual diet, but discontinue such a mixture as honey in its water. A bath every day will do good.—W. A. B.

**QUERY UNANSWERED (E. J. Poer).**—We have no unanswered question. Please to send it again.

**SUPERING—WEIGHT OF STOCK (P. Rainford).**—An early good swarm from

your 18-inch hive will fill both a hive and a super in a favourable season for honey. As soon as the hive is filled with combs put on a super. If no second swarm be taken, a super may be put on the old one about three weeks after swarming. In a honey season an 18-inch hive will weigh about 50 lbs. at swarming time, but much depends on a few fine days at that time.

**SUPERS DO NOT PREVENT SWARMING (James Bailey).**—A super put on a hive does not always prevent swarming. Sometimes bees do not enter a super, and sometimes they will swarm when it is half filled. A swarm will readily take to the hive full of combs in which the bees have died out, if the combs are sweet and clean.

**SWARMING BEES (T. G.).**—It is an excellent plan to put the swarm in the old stock's place. By this means generally all other swarming is stopped, and so the old hive does not become excessively weakened. This is all the more to be recommended in your case, as you do not wish to increase your stock much. Put the glasses or supers on before they swarm; you may do it now if your hives are strong. You can put them on the swarms about three weeks after hiving. Unless these are of considerable size the bees will swarm, only somewhat later. As to size of hives, boxes, or otherwise, we advise large hives for large swarms, small hives for small swarms; but a good average size is 15 inches square inside measure, and 10 inches high.

### METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	8 A.M.					IN THE DAY.					Rain.
	Barometer at 32° and Sea level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
We. 22	50.101	60.8	68.2	N.W.	53.6	72.8	45.8	115.6	93.4		
Th. 23	50.155	68.7	54.8	N.E.	54.0	79.2	48.5	121.3	41.8		
Fri. 24	50.170	55.5	53.2	W.	55.0	65.4	49.4	92.0	47.8		
Sat. 25	50.181	60.0	57.6	S.W.	55.0	68.8	52.4	93.8	42.0		
Sun. 26	50.176	62.5	56.4	N.E.	54.8	73.6	49.3	113.2	45.7		
Mo. 27	50.208	61.2	56.5	N.E.	55.6	73.8	46.1	115.4	44.1		
Tu. 28	50.296	58.0	51.2	S.E.	56.2	64.0	47.1	108.2	48.4		
Means	50.179	59.5	54.7		54.9	71.1	47.7	108.5	48.4		

### REMARKS.

22nd.—A splendid day, and very fine night.

23rd.—Very fine day throughout; bright, warm, and beautiful both day and night.

24th.—Rather dull morning; much fiercer in the afternoon; altogether a pleasant day, though colder than the previous ones.

25th.—Fair all day, but dull, and at times dark and stormlike.

26th.—A most enjoyable day, bright, and clear, but at times rather too warm.

27th.—Remarkably fine, bright, and warm for the season, being more like a day in July than in April.

28th.—Another similarly fine day, but much cooler out of the sun; in the evening it was decidedly cool.

A week of remarkably warm weather. No rain; sun as bright and sky as clear as in the height of summer. A further increase of 6° in the mean temperature, or 12° in a fortnight; but for northerly and easterly winds prevailing it would doubtless have been still more.—G. J. SYMONS.

### COVENT GARDEN MARKET.—APRIL 29.

BUSINESS slightly improved. The demand for bad goods is more general, and the supply has much increased during the past week. Strawberries and grapes are quite sufficient for the trade. Retarded Grapes are now off the market, and very few Peas to be had. New Potatoes are coming from the West of England, France, the Channel Islands, Malta, and Lisbon: price ranges from 4d. to 1s. per lb.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	2 0 to 8 0	Mulberries.....	½ lb.	0 0 to 0 0
Apricots.....	doz.	0 0 0	Nectarines.....	doz.	0 0 0
Cherries.....	½ lb.	0 0 0	Oranges.....	½ 100	4 0 16 0
Chestnuts.....	bushel	10 0 0	Peaches.....	doz.	16 0 45 0
Currents.....	½ sieve	0 0 0	Pears, kitchen.....	doz.	2 0 6 0
Black.....	doz.	0 0 0	dessert.....	doz.	8 0 10 0
Figs.....	doz.	0 0 0	Pine Apples.....	lb.	6 0 10 0
Filberts.....	lb.	1 0 1 6	Plums.....	½ sieve	0 0 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	1 6 2 6	Kaspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	4 0 11 0	Strawberries.....	½ doz.	0 6 1 0
Lemons.....	½ 100	0 0 0	Walnuts.....	bushel	10 0 16 0
Melons.....	each	0 0 0	ditto.....	½ 100	2 0 2 0

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	8 0 to 0 0	Mnashrooms.....	pottle	1 0 to 2 0
Asparagus.....	½ 100	2 0 5 0	Mustard & Cress.....	punnet	2 0 6 0
French.....	doz.	0 10 0	Onions.....	bushel	4 0 7 0
Benna, Kidney.....	½ 100	2 0 0 0	pickling.....	quart	0 8 0 0
Beet, Red.....	doz.	1 0 8 0	Paraley per doz.	bunches	4 0 6 0
Broccoli.....	bundle	0 9 1 8	Paranips.....	doz.	0 0 0 0
Cabbage.....	doz.	1 0 1 6	Peas.....	bushel	3 6 4 6
Capsicums.....	½ 100	0 0 0	Potatoes.....	doz.	0 0 0 0
Carrots.....	bunch	0 6 0 0	Kidney.....	doz.	0 0 0 0
Caniflow.....	doz.	3 0 8 0	Round.....	doz.	0 0 0 0
Celery.....	bundle	1 6 2 0	Radiishes.....	bunches	1 0 1 6
Colewort.....	doz. bunches	2 6 4 0	Rhubarb.....	bundle	0 9 1 0
Cucumbers.....	each	1 0 2 0	Salsafy.....	bundle	1 6 0 0
pickling.....	doz.	0 0 0 0	Savoy.....	doz.	1 0 2 0
Endive.....	doz.	2 0 0 0	Scorzenera.....	bundle	1 0 2 6
Fennel.....	bunch	0 8 0 0	Sea-kale.....	basket	1 0 3 0
Garb.....	doz.	0 11 0	Shallots.....	lb.	0 3 0 0
Herbs.....	bunch	0 8 0 0	Spinach.....	bushel	2 8 0 0
Horseradish.....	bundle	3 0 4 0	Tomatoes.....	doz.	0 0 0 0
Leeks.....	bunch	0 8 0 0	Turnips.....	bunch	0 3 0 4
Lettuce.....	doz.	1 0 4 0	Vegetable Marrows.....	doz.	0 0 0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 7—13, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
7	TH	Meeting of Royal and Linnean Societies.	60.3	39.4	49.8	18	23	44	39	47	8	1	58	7	21	3	89
8	F		64.8	40.7	52.7	15	21	4	31	7	44	1	16	9	22	3	92
9	S		66.0	43.3	54.1	15	19	4	33	7	11	2	41	10	23	3	96
10	SUN	5 SUNDAY AFTER EASTER.	65.7	41.0	53.4	16	18	4	25	7	32	2	after.		24	3	100
11	M	Meeting of Royal Geographical Society.	66.2	42.2	54.2	17	16	4	33	7	47	2	35	1	25	3	101
12	TU		67.0	43.7	55.4	14	15	4	33	7	1	3	2	3	26	3	102
13	W	Royal Horticultural Society, Committee Meetings and Show of Pot Roses.	66.9	43.4	55.2	20	13	4	39	7	15	3	31	4	27	3	103

From observations taken near London during forty-three years, the average day temperature of the week is 65.2°; and its night temperature 41.8°. The greatest heat was 81° on the 12th, 1853; and the lowest cold 21° on the 8th, 1855. The greatest fall of rain was 1.14 inch.

## THE FERNS OF ST. HELENA.—No. 1.



THIS remarkable island lies in the South Atlantic Ocean, nearly 1200 miles from the nearest point (Cape Negro), upon the coast of the African mainland, and would appear to be entirely volcanic in its origin. The rocks are described as rising up round it like a wall to the height of from 600 to 1200 feet; the circumference does not much exceed twenty-eight miles, and yet the centre rises up to the height of nearly 2700 feet, the highest point being called Diana's Peak. The flora of this island has always possessed a strange magical charm for me, more especially as many of the species exist in a natural state in no other part of the globe; and we would almost be inclined to attribute these strange and peculiar forms of the vegetable world to climatic influence alone, did the fact not remain that some of its plants differ in no respect from those still to be found upon the African mainland. I have been engaged lately in mounting a set of specimens to illustrate the Fern flora of this little speck of land, and, rightly or wrongly, have conceived that some slight remarks upon them would not be found uninteresting to some of the readers of "our Journal;" and although I would be the first to take steps to prevent the eradication of these plants from their native habitats, I cannot help reminding my readers that there are still several species which have not yet been introduced into cultivation, and therefore those having friends or acquaintances resident upon the island should use their persuasive powers to induce them to pack up a few plants and send them home by the mail. They all thrive in a cool fernery, and would therefore be doubly valuable to the lovers of Ferns who have no accommodation for those kinds which require stove heat.

*DICKSONIA ARBORESCENS*.—Upon this little island is found a beautiful representative of the genus; its stems are sometimes tolerably stout, at other times somewhat slender, attaining a height of from 6 to 10 feet, and frequently branched. The stipes and rachis are densely clothed with a coating of long ferruginous hairs; fronds bi-tripinnate, coriaceous in texture, and deep green in colour; they spread out horizontally, and form a flat table top, after the manner of the New Zealand species, *D. squarrosa*, but in other respects it is thoroughly distinct. It is a splendid plant, and although very rare, will, when thoroughly established, form a fine specimen in the cool fernery. It is only found on the very top of Diana's Peak, and is peculiar to the island; therefore, much as we would enjoy its presence in our plant houses, some restrictions should be enforced to prevent its extermination.

There are several species of *Asplenium* indigenous to the island, yet, strange to say, as far as I am aware, no solitary example of the Maiden-hair Fern (*Adiantum*) has been discovered. The various kinds of *Asplenium* are handsome and useful for decorative purposes, and will thrive in the cool fernery admirably. The pots in which

they are grown should be thoroughly drained, and the soil should consist of equal parts of loam, leaf mould, peat, and sand. I am always particular respecting drainage in my advice to everyone, as I find, from daily experience, that want of it is the great rock upon which amateurs so often come to grief, and not unfrequently professionals may be found whose various misfortunes and disappointments arise from the same cause.

*ASPLENIUM COMPRESSUM*.—An erect bold-growing plant, peculiar to St. Helena, plentiful in cultivation, when it may often be found bearing the name of *A. fecundum*; when well grown it attains a height of between 2 and 3 feet. The fronds are pinnate, the pinnae being large, broad, thick, and fleshy in texture, and dark green, frequently bearing young plants upon the upper surface. It thrives well in the cool fernery, and in a young state may be used with much advantage in the Wardian case or for the decoration of apartments.

*A. FURCATUM*.—This differs from the preceding, inasmuch as it is confined to one locality, but is to be met with in nearly every part of the tropical and subtropical world, and no wonder, therefore, that it established itself upon this little island. It is a handsome species, varying considerably in its different habitats. It usually has fronds from 1 to 3 feet in length, pendant and dark green; they are bipinnate, with long erose pinnae, which are dark green in colour and leathery in texture; the latter circumstance renders this handsome plant extremely useful for in-door decoration, as its fronds do not readily suffer from the somewhat dry atmosphere of the dwelling-house.

*A. LANCEOLATUM*.—Here we have a plant familiar to us as a native of the British isles. It is a very pretty dwarf-growing Fern, and only included in this enumeration because it is indigenous to the Island of St. Helena.

*A. ERECTUM, var. PROLIFERUM*.—A very pretty species, very widely distributed over the tropical world, and, consequently, extremely variable in form. The fronds upon good plants are upwards of a foot in length, pinnate, and bright green in colour; the sori are large and conspicuous, and add materially to its effectiveness. The present variety is distinguished by its habit of bearing quantities of young plants upon its fronds. It is a charming Wardian-case Fern.

*A. GEMMIFERUM*.—This is a fine bold-growing plant, producing long pinnate fronds from 1 to 3 feet in length. The pinnae are large and of a very lively green; sori copious, bold, and dark brown. The plant to a great extent resembles *A. lucidum*, but the two are easily distinguished when growing. It is very effective in the cool fernery, or for in-door decoration during summer. I have seen no authentic specimens of this plant from St. Helena, but have been assured upon good authority that it is to be found there, although not peculiar.

*A. FALCATUM, var. FIRMUM*.—This is a peculiar form of a species having a most extensive geographical range, and which is found varying more or less in appearance according to situation in various parts of India and Ceylon, in many of the South Sea Islands, Norfolk Island, Australia,

and New Zealand, in the latter most abundant. The variety *firmum* is, I believe, peculiar to St. Helena. It is a pinnate species, having pinnate fronds from 1 to 2 feet in length; pinnae large, coriaceous in texture, and deep green. In the variety under notice, however, the plant is more erect, the peculiar *erose* pinnae are broader and much thicker—indeed the whole is more erect and robust in habit; sori very short, and almost invariably placed near the costa. Any form of this species is deserving a place in the amateur's collection, and when young those having only a Wardian-case garden may enjoy its beauty. This particular variety, however, is by no means common in cultivation.

**DIPLAZIUM ARBORESCENS.**—As a large specimen in a cool fernery this plant is very effective; indeed, with age it forms a short, stout, erect stem, so that it may with propriety be termed sub-arborescent when in that state. The fronds upon large plants are about 4 feet long, and upwards of 2 feet wide; they are bipinnatifid, the segments being finely divided and dark green, whilst the crown and base of the stipes are clothed with large, black, chaffy scales. *D. arborescens* is found in the Isle of Bourbon, Mauritius, and the Fiji Islands, but the plants from St. Helena have always struck me as being much larger and stouter in all their parts, so much so as to cause me to consider it a thoroughly distinct plant, which in a cultural point of view it undoubtedly is.

**GYMNOGRAMMA NAMAQUENSIS.**—This plant grows some 5 or 6 inches high; bipinnate or bipinnatifid; the black stipes and rachis are very conspicuous, and are clothed when young with dull brown chaffy scales. It is a pretty little species, not at present in cultivation as far as I am aware, but it would prove a great acquisition to Wardian-case gardeners especially. Abundant in various parts of South Africa, varying considerably in form. The St. Helena plant is usually more bipinnate than the others.

**HYMENOPHYLLUM CAPILLACEUM.**—St. Helena can also boast of its Filmy Fern, and a very beautiful species it is. I have seen it come to England upon the stems of *Dicksonia arborescens*, but am not aware if it is established in our collections. The fronds are 3 or 4 inches long, sometimes a little more, pinnate, the pinnae being somewhat distant and connately pinnatifid. It has a slender, wiry, creeping rhizome, and when hanging over a piece of rockwork would prove a charming object. It is peculiar to the island.

**CHEILANTHES MULTIFIDA.**—This pretty plant is usually considered to be a native of the Cape of Good Hope, but although found widely distributed in that colony, it is also a native of St. Helena. The fronds are triangular, some 6 or more inches high, and deep green; stipes stout, fronds four times divided. I have found this species thrive well in the cool fernery, but it dislikes water resting upon its fronds, and the soil should have some pieces of sandstone mixed with it.

**GRAMMITIS MARGINELLA.**—A pretty little species specially adapted by its size for cultivation in the Wardian case. When treated as a basket plant, or grown upon a block of wood and suspended from the roof, it forms an elegant and distinct plant. Fronds simple, entire, from 3 to 6 inches long, and about half an inch wide, dark green in colour, and leathery in texture. When it is fertile the sori are very conspicuous, and add materially to the beauty of this pretty but rare plant. It is also found in the West Indies and in various other parts of America.—**EXPERTO CREDE.**

### ROSE GENERAL VON MOLTKE.

SOME two years ago I had submitted to me some blooms of a Rose raised by Messrs. Bell & Sons, of Norwich, which seemed to be well worthy of cultivation. The opinion thus formed on the cut blooms has been confirmed by further acquaintance with it as a plant. I have it now in my greenhouse, a small plant with five blooms, and this is the fair and honest description of it. It seems, as a plant, to be vigorous and the foliage ample, and as each shoot carries a blossom I conclude that it is free-flowering. Size, I should say medium; shape, excellent—one of those shelly flowers one likes to see; colour, very brilliant, the raisers say the most scarlet of any Rose raised. This I cannot say, I think it is; but then Roses in houses partially forced never seem to me to be quite certain in character, and looking through several collections this year has confirmed me in this opinion; but at any rate the colour is brilliant, and I may add it has one charm wanting in many of our new Roses—it is deliciously fragrant. How much Baroness Rothschild loses by its utter want of perfume! and how deli-

cious the old Cabbage Rose is from its fragrance! Unless it alter its character very much, which I do not think it likely to do, we have another good English Rose. The plate sent with it by no means does justice to its beautifully imbricated form.—*D., Deal.*

### GRAPE VINE CULTURE FOR SMALL GARDENS.

No. 4.

VENTILATION ought always to be regarded as a purifying health-giving process rather than as a means for simply raising or lowering the temperature, a free circulation of pure fresh air being as necessary for the health of plants as it is for that of human beings. We therefore hasten with all due caution to open the back ventilators of a vinery as early as possible in the morning, to allow the vitiated air to escape and to promote as brisk a circulation as may be safe, by which means we induce a sturdy robust growth. Great watchfulness and care must, however, be exercised to exclude cold draughts, it being self-evident that the tender Vine shoots growing in a temperature of 70° must suffer severely by exposure to the external air when it is 20° or 30° lower; and when the circulation of air in a vinery is termed brisk, a lively, pure, drying atmosphere is contemplated, and nothing more. The closing of the ventilators is regulated by the ever-changing condition of the external temperature; and it is a very safe general rule to close the house on all bright sunny days with the thermometer at 90° till the fruit is fully ripe. A little night air is advantageously admitted during the colouring of the fruit, and after it is ripe an abundant supply of fresh air should be constantly admitted from the front as well as the back ventilators.

Overcropping is a very prevalent evil. It certainly requires some philosophy to remove so many fine promising bunches as is often necessary; but if this is not closely attended to it leads to shanking in the present season and to sterility and weakness in the future. When the side shoots or fruit-bearing branches of a Vine are 18 inches apart, each with its bunch of fruit, there is no danger of overcropping, and the foliage has ample breathing space, light and air playing upon and around it freely, causing it to grow so large in size and stout in texture as to afford the clearest evidence of the beneficial effects of such treatment, more especially as fine foliage implies fruit of a corresponding size. It is altogether a mistake to suppose that a quantity of small bunches will be more profitable than a moderate number of large ones. Weight for weight, the large bunches will beat, to say nothing of the finer and more insidious flavour of the fruit, in addition to the great gain in vigour, health, and cleanliness, for the deep green foliage is seldom attacked by red spider, which more frequently revels and spreads among the densely packed leaves of a more crowded growth. Even if this pest is found upon the better cultivated Vines, the large leaves stand out so clearly that a tub of pure filtered water and a powerful syringe at once dispose of them. I know not how far Mr. Taylor may be correct in stating that the water does them no harm, but I take good care that it shall wash them, webs and all, off the foliage immediately the slightest trace of their obnoxious presence is perceptible. Only let us secure cleanliness, pure air, with ample space for the growth and foliage, and we can dispense with sulphur or any other nostrum as a curative. Shanking, or the premature decay of the fruitstalks, is not the only evil that is immediately attendant upon overcropping, for the fruit which escapes its ravages is usually deficient both in colour and flavour, as well as being very small in size.

Another most important matter is the thinning of the berries. Old practitioners are usually able to complete the entire thinning at once, but a knowledge of this fact need not deter the tyro from repeating the operation again and again, even after the berries are of a considerable size. One season's experience, and the remembrance of the size of a fully-developed berry, is generally sufficient to enable one to decide with tolerable accuracy upon the number of berries which it is desirable to retain.

The management of the growth is a very simple matter, but upon the principle that the reason for every cultural detail should be thoroughly understood, it will be well to explain the process. The tip of each side shoot is pinched off at the first or second joint beyond the bunch, which causes a number of other shoots, termed sub-laterals, to appear; these again are all kept pinched off at the first joint throughout the season, the object being to concentrate the entire vigour of the Vine upon what may be termed the permanent growth of the season.

Now, it is very evident that when the entire growth of any plant is stopped in this manner it sustains a certain check or shock, to avoid which not more than half the shoots upon each branch should be pinched at the same time, and even this is not done while the Vines are in flower, the entire growth being then untouched till the swelling fruit is visible.—EDWARD LUCKHURST.

### ON VARIOUS BEDDING PLANTS.

I CAN sympathise with Mr. Hamilton with respect to *Ageratum Tom Thumb*. It is—at all events in our wet Irish climate—a vile thing, as vile as Mr. Hamilton's vile blue bedding tiles, which seem to me floricultural millinery of the worst description. I was enchanted with *Tom Thumb* when I first saw it, and thought we had got hold of a gem; but I very soon changed my opinion, as did everyone in my neighbourhood whose opinion is worth registering. Not only has it all the faults noticed by Mr. Hamilton, but its blossom soils in the most odious way under the slightest showers, so that the plants are always more than half-covered with dirty blotches. *Imperial Blue* is a much more satisfactory bedder.

I should be glad to see the merits of various bedding plants more ventilated in the *Journal* than has lately been the case. In particular I should like to elicit opinions from various quarters as to which of the new *Bicolor* and *Tricolor* *Geraniums* are the most satisfactory. Many of the most beautiful of these will not bed at all with us here; for example, most of *Lsing's* beautiful varieties I have tried two or three years running—*Impératrice Eugénie*, *Princess Royal*, *W. P. Morris*—and have reluctantly to give them up. *Reine Victoria* is lovely, and does somewhat better; but unless one has such appliances as will enable one to turn out these varieties of good size and in great number they make but a miffy bed. After trying a great many kinds of *Bicolors* I am inclined to give the palm to *Dragon*, combining, as it does, hardiness, compactness, brilliancy of colour, and very free growth.

I take this opportunity of cautioning beginners against being taken in by the seductive advertisements they see in every gardening paper of *Geraniums* at fabulously low prices. They do not get the worth of their money. The plants sent are so microscopic that the season is over before they put in an appearance at all. There are hundreds who are attracted by the tempting prices who are unable to give these little tender infants the care, nursing, and nursery they require, and they perish under the treatment that larger plants would survive.

I should be glad to hear sentence pronounced on the new *Pansies* and *Violas*. I have often written enthusiastically in the *Journal* in praise of *Imperial Blue Pansy*, but most of my friends declare they cannot grow it. With me it does beautifully, and is a blue cloud from April till October.

I am inclined to think very highly of *Lobelia Mazsrine Blue*, sent out last year by Messrs. E. G. Henderson. In a mass, and at a distance, it has a more true-blue effect (and what commendation can be higher than this?) than any other summer-bedding plant I am acquainted with. *Myosotis Empress Elizabeth* will, I think, prove an acquisition. It remained in bloom with me last year the whole season. I have a small bed of it this year, and will report on it later on. *Tropæolum Cooperi* still maintains the high character stamped upon it by Mr. D. Thomson, and resists frost better than most other kinds. Lastly, *Celosia Huttoni* bedded beautifully, and was so distinct in shape and growth that I sincerely trust Messrs. Veitch will not have to tell me another year that they cannot supply me.

I hope some other correspondents will kindly tell us about any novelties of value they found out last year.—D. F. J. K.

### THE AMERICAN POTATO BUG.

THIS veritable bugbear is occasioning some alarm among gardeners and agriculturists, and precautionary measures have been suggested for adoption in the event of its attempting to cross the Atlantic. But really we are not justified in speaking of this in the singular, as it now appears that under this vague term are included about a dozen different beetles of the genera *Lytta* and *Epicanta*. I think we are not likely to adopt hastily in this country some of the remedies employed in America, even were the pest to show itself, or otherwise it would be needful to protest against the free use of Paris green mixed with flour or lime, and arsenic also, in the proportion of 1 oz. to a pound of flour, both being dusted over the leaves, and

ultimately, of course, washed down into the soil; for it is still a moot point whether in the admixture of arsenic with soil compounds are not sometimes formed with organic matter, and drawn into the tissues of plants.—J. R. S. C.

### FLOWERS FOR OUR BORDERS.—No. 31.

*MICROSPERMA BARTONIOIDES*.—*BARTONIA*-LIKE *MICROSPERMA*.

THE pretty annual now figured is closely allied to the *Bartonia*s, from its resemblance to which it has derived its specific name. It is a native of Mexico, and was introduced into this country from Hamburg in 1849, under the name of *Eucnide bartonioides*. It is of succulent habit, growing about a foot high,



*Microsperma bartonioides*.

with ovate, lobed, and serrated foliage. The flowers, which are nearly 2 inches across, are terminal, and produced either singly or in pairs, with five spreading, ovate, obscurely-toothed petals, of a sulphur-yellow above, but much paler beneath. The stamens are arranged in five fascicles or bundles, the filaments of each fascicle being united at the base, and attached to one of the petals; the stamens arise in two distinct rows or series from the point at which they are united. The filaments are very long, bearing a roundish flattened anther, opening by its margin. The style is about the same length as the stamens; stigma undivided, but with five longitudinal furrows at the extremity.

The seed-vessel is one-celled, many-seeded, opening at the top by five valves. Seeds attached to the walls of the ovary, in five longitudinal ridges or placenta. They are very numerous and minute, of an oblong form, and with several spiral furrows, which are visible, however, only under the microscope. In the *Bartonia*s the stamens, although fully as numerous as in the *Microsperma*, are not divided into fascicles as in that genus.

The cultivation of the *Microsperma* involves a little care; for, although it is quite hardy enough to bear the open air, its succulent nature renders it liable to injury in all stages of its growth from any excess of moisture, whether in the seed-pan or the borders. It may be raised in the spring on a gentle heat, in pots of well-drained sandy loam. The seeds should be thinly sprinkled on the surface of the soil, and then gently pressed in; they will germinate with greater readiness than if covered more deeply. In raising these and other small seeds, it is a good plan to cover the rim of the pot with a piece of

glass, which will greatly retard the evaporation from the soil, and obviate the necessity of frequent watering; but as soon as the seedlings are above the soil, the glass should be partially removed, as too much care cannot be taken to preserve them from damping-off. When sufficiently large to transplant, they should be potted two or three together, in 4-inch pots, using a mixture of sandy loam and leaf mould or peat; good drainage must be insured by a handful of crocks. In May the plants may be transferred to the borders, with their balls of earth entire. We are inclined to think that the seed might be sown in the open borders about the middle of April, if the soil is light, and a hand-light can be placed over the patch for the first month or so. The plant may also be grown in pots for the window or greenhouse; and in this situation it will be more likely to ripen seed than in the open ground. As in the case of the *Loasas*, and some other genera of the same family, the foliage of this plant is armed with stinging hairs, but they are much less venomous than in *Loasa* and *Calophora*, and need not deter the amateur from its cultivation.—(W. Thompson's *English Flower Garden*, Revised by the Author.)

### MR. TURNER'S AURICULAS.

On my return from Clifton the other day I made use of the opportunity to look over the collection of my friend Mr. Charles Turner, and will make it the text on which to spin a yarn on my favourite flower; for such, notwithstanding the rival claims of the *Rose*, *Gladiolus*, and other florists' flowers, I still believe it to be. My own collection, larger, better, and in better health than ever it was, has this year somewhat disappointed me, but this I do not attribute to any difficulty in the plant, but to some neglect of my own. I have hitherto repotted in August, and last year I was a good deal away both in that month and in September, and I am rather inclined to think that my plants did not receive the amount of water that they ought to have had, and that hence there was not vigour enough in them to show a good truss of bloom. My trusses were smaller than usual. They would have suited the northern growers who like a small truss, for they were mostly very true to character, and as I look on them now I find that very few of them puzzle me, as they sometimes do, whether they are correctly named or not. As one consequence of this I was well beaten at the little show which the Metropolitan Floral Society held at the Regent's Park Spring Exhibition by Mr. Douglas, whose collection is not one-sixth the size of my own; but then he does everything he undertakes in such style, that I felt sure he would beat me when he set to work.

Mr. Turner's collection is not nearly the size that it was some years ago, although I know he has bought some two or three collections, but he tells me that the demand is so great that he finds it impossible to meet it, and is quite sold out of some kinds. It is a pity that we do not see more of these, for there is no flower that attracts more attention at the exhibitions than they do. At the Park the other day one was surrounded by a number of persons asking all sorts of questions, and taking down names, &c., and it would greatly enhance the pleasure of exhibiting to meet with more competitors. I would sooner a great deal be beaten as I was this year, than walk over the course, or only have one competitor, as has frequently been the case. Mr. Turner's collection ought to have been at its zenith when I was there, but the extraordinarily hot days we had the week before last and the beginning of last week had very much altered their appearance, and they were fast going out of bloom.

There are a few general facts connected with the blooming of the *Auricula* which I think received confirmation in Mr. Turner's collection, and I may as well refer to them before speaking of any special varieties. 1. As far as one's knowledge in the south goes it is clear that, as in other flowers, some seasons are specially favourable or unfavourable to certain kinds. Wherever, for example, I have seen Colonel Channpneys this year it has been fine both in foliage and truss; while George Lightbody has not been up to the mark. It is very odd; one of those things "no fella can explain;" but so it is. We notice the same in *Roses* and *Tulips* and in *Strawberries*, and it seems to be the same with the *Auricula*. 2. It is also clear that heart blooms—those that spring from the centre of the plant, cannot be so thoroughly relied upon as being true to character as those from the side. For instance, there was a plant here of Richard Headly with two trusses, one from the centre, the other from the side, and I venture to say that no person would have been able to detect the plant from the

centre bloom, so thoroughly out of character was it, while the side bloom from the same plant was all that could be desired. 3. Notwithstanding all that has been done, and the beautiful varieties that have been raised of late years, we have not, if we take the rigid rules of the florist as our guide, obtained a perfect *Auricula* as yet; in some point or other it comes short, and so there is a field open still to the seedling-raiser, and let him take heart from this, that varieties which were sent out seventy years ago and more can take prizes now.

And now with regard to some of the varieties noticed at Mr. Turner's.

*Alderman Wisbey* (Headly).—A good greenedge, having, however, like all *Auriculas*, a fault or two. The paste is not quite solid enough, and consequently has a streaky appearance; and there is a white line round the segments, allowable in a grey edge, but a defect in a green edge. Its habit is vigorous.

*Col. Channpneys*.—A very taking flower, somewhat of the colour of Smith's *Britannia*, but of a splendid habit; for though only four or five years in commerce, Mr. Turner has a large stock of it. It was especially fine this season. The ground colour is bright violet, running too often into the edge, and the eye is somewhat pale in colour; but it is a very attractive flower, especially on the home stage, and will always hold its place for that reason.

*Competitor*.—A fine grey edge, somewhat in the style of Robert Trill. The paste is good, eye not so orange as in that variety, habit excellent.

*Alderman Charles Brown*, or simply Charles Edward Brown, for it is known under both names, is another of Mr. Headly's seedlings. Of fine habit, propagates freely, and is an excellent smooth grey-edge flower, good solid circular paste, and bright colour.

*Charles Edward Perry* (Turner).—A souvenir of our lamented friend. A very bright purplish-blue self; foliage beautiful and ample, and habit good; colour approaching Spalding's *Metropolitan*. Perhaps a little flimsy, but a fine trusser, and sure to be a favourite on the home stage.

*Master Hole* (Turner).—A pretty flower of good quality; so much so that a plant with a small truss took the first prize in self before C. E. Perry and *Metropolitan*, its smoothness and quality recommending it.

*Cheerfulness* (Turner).—Bright violet self; smooth, clear, white paste. The truss large, and the plant good.

*Unexpected* (Turner).—A very good grey-edged flower; fine truss; paste clear and good; apparently also of good habit.

*Mrs. Mendel* (Turner).—A pretty white-edged flower, but I fear difficult to grow, as it has been raised some years, and there is no stock of it.

Of course Mr. Turner had all the leading varieties in fine order, *George Lightbody*, *Lancashire Hero*, *Imperator*, *Robert Trill*, *Admiral Napier*, &c.; but I have often written of these, and have therefore only denoted those which are newer and less known.—D., *Deal*.

### FRUIT PROSPECTS.

SOME of your correspondents have been congratulating the public on the escape of the fruit blooms from the frost of the 10th of March. I am sorry to say it is not so with me. All the standard *Cherries*, *Plums*, and most of the *Pears* (standards) are a total failure. A large *Siberian Crab* that I expected would be one sheet of bloom has every blossom destroyed; and nine-tenths of the *Damson* bloom has also dropped without opening at all.

I enclose a few *Cherry* buds to show in what stage of growth they were at the time. The blossoms on the wall trees, where the branches are not closely nailed, are equally bad.—T. G., *Clitheroe, Lancashire*.

[The *Cherry* buds you enclosed were leaf buds.—EDS.]

### NARCISSUS POETICUS.

THIS fine old plant has almost been driven into obscurity by a race of others with more high-sounding titles, but not more useful or ornamental, many of them in fact decidedly inferior. Florists, however, who cater for the popular taste, know its value; and *poeticus* is the *Narcissus* frequently seen in fruiterers' windows in London and elsewhere tied up in large bunches, and casting their sweet fragrance even into the street. I allude to it here as a plant well worthy of forcing in quantity, and of planting extensively in the borders. The flowers, which are borne singly, are about 2½ inches across, pure white, with a greenish-yellow eye fringed with deep orange, and sweetly, but not overpoweringly as some are, perfumed. A bouquet of the flowers neatly made up, and fringed with *Maiden-hair Fern*,

is not easily surpassed. For button-holes it is also peculiarly well adapted and often preferred. A single Rose bloom set in a ring of *N. poeticus* is a unique and pleasing combination of colour and fragrance, particularly in winter or spring, when flowers are not plentiful.

When grown in pots, the best bulbs should be selected and potted thickly, say 8 or 12 in a 9-inch pot. These will give a good group of flowers either for cutting or vase work. We planted a large quantity of roots out last November in the herbaceous border, which are now just coming through the soil, and will be in time to succeed the latest-forced batch. Any ordinary light rich soil suits it, and the bulbs should be planted 3 or 4 inches below the surface of the soil.—J. T. W. (in *The Gardener*).

### THE ORCHARD HOUSE AT BLENHEIM.

I OBSERVE that Mr. Fountaine has not passed over my remarks on the orchard house here; and as the matter is taken up in detail, I will in turn notice Mr. Fountaine's remarks in detail and very briefly.

Well, then, I think that no one will blame me for planting the trees out, even if I should have no better results than from the pot system, as there is no object in view to cause the trees to be taken out, seeing that I am not allowed to plant Vines or anything else over the roof. If I had to build a house for the purpose of growing stone fruit only, probably I would have portable lights which could be taken off in summer to allow rains to wash the trees and water them, or adopt the principle Mr. Thomson so satisfactorily carried out at Dalkeith—viz., having the ventilating sash at top so fixed that in a few seconds rain could be admitted to drench the trees. If Vines are planted, and the trees to remain under them permanently (I never have recommended such a practice, though it has in many places been successfully carried out), they may stand 4 to 5 feet apart, and then an open space of glass—2 feet to 3 feet—be left between the Vines for light to the trees. The continued breeze of fresh air passing through the house when the fruit begins to ripen gives high flavour, and such Grapes as Hamburgs grown under this treatment are of excellent quality, though they take longer to ripen. I have often had heavy crops of this Grape in a narrow Peach house, with berries 4½ inches in circumference, hammered, and as black as Sloes. But what one has done, and is often obliged to do, to meet the requirements of employers may be foreign to what his practice would be had he things all his own way. My idea is in this respect confined to the old rut—viz., a good vinery full of foliage, with fine Grapes all over the roof, and a separate house for stone fruits, partially filled with trained trees and the other part with cordons for succession, leaving no part of the back wall or front training wires uncovered. This I prefer to mixing the crops of Vines and stone fruits under any system.

I repeat that Mr. Thomson, like many other skilful cultivators, grew excellent Peaches and Grapes in the same house, but whether from choice or not is another matter.

I am aware that Mr. Fountaine's system of fruit-growing was submitted to Mr. Thomson when he was gardener at Dalkeith; however, it was not put into practice there, no doubt for the reason that there was excellent convenience in other structures for growing what was required, and it is well known that Peaches and Apricots of the best quality were grown in abundance there under glass fixtures, and they often kept some of us minor exhibitors on the look-out. The Peach and Apricot houses which Mr. Thomson had put up at Dalkeith are, for elegance and utility, perhaps not equalled anywhere. They cover a wall 400 feet long, and I have seen fine pots of other fruits along the fronts of these structures. I have no doubt but Mr. Dunn, the present intelligent gardener at Dalkeith, is rewarded with fine crops from these structures. I have never said that Mr. Thomson, or any other cultivator in his senses, advocates growing fruit in the shade.

I went to Chiswick with a number of friends early last August, and did admire the Madresfield Court Grapes on one healthy Vine, and this was all at the time of my visit there was under the structure. Mr. Barron called my attention to the trucks loaded with fine healthy trees outside, and I examined them, and was impressed that they had been well attended to, but admired no fruit, as there was only healthy foliage. Matters may be quite different this year, and I would not denounce any system although a "slip had been between the cup and the lip" one season. While hinting at the £ s. d. point of view, it was to save labour, and I hope, by reducing

that item to a sixth, to have returns equal to the produce on the trucks.

In regard to the remarks on market men and market systems, they must get quality as well as quantity, otherwise their labours would be thrown away without profits—inferior produce is profitless.

In orchard houses early and late kinds could be grown under the same roof. Market men would differ here, as they would prefer having the one structure divided into compartments for succession, just in the same way as they do their Grapes, flowering plants, and other things. By using trucks market men could not afford to lose so much space as the trucks occupy outside. Rents, where market gardens are most profitable, are very high, and it is astonishing how every corner is turned to account. Few amateurs could afford the space which truck rails occupy remaining idle such a great portion of the year. In such broad lands as there are at Blenheim, of course, such space unoccupied is of little moment. Where private gardeners know market-growing well they do not find it disadvantageous to apply the principle in private gardens. As examples, the ex-champion, Mr. Turnbull (late of Blenheim), did not consider market knowledge useless at Blenheim; and the present champion, Mr. Gilbert, at Burghley, whom I visited lately, finds it does not require a "totally different process from that required for a gentleman's table" to grow for market. The regulating of the supply is the only difference, as the quicker the sale the more profitable are the returns. But market growers keep men to do their work thoroughly; they have means, however simple, efficient to carry on their trade, and they attempt only what they can do properly. In private gardens generally extra work or extra demands are seldom met by an allowance of extra labour power; therefore we avoid as much as possible the work which gives the least tangible return.

Regarding my purpose of abandoning the idea of growing Vines in the orchard house here, I thought it absurd to carry out any system which my experienced predecessors had to relinquish by order of their employers. It must be remembered that after all I am only an *employé*, and cannot do as I choose, but meet the wishes of my employers; and of course my predecessors had to act on the same principle: so things remain as they were. The only objection I have to orchard houses on the pot system is the vast amount of labour they give compared with trees planted out as a plot of Gooseberries. Then little more labour is required, especially if the orchard-house lights are portable and can be drawn off to allow free access to rain during the warmest part of summer, replacing the canopy when the nights become colder and the atmosphere too damp to ensure high flavour. Trees can be arranged when planted out to give an early and late supply as well as on trucks with the pots hanging in mid-air.

If Mr. Fountaine can bring his fruits on under glass to give earlier supplies the Vines will be there still; then what about shade, which alarms him so much in the earlier part of his paper? This suggestion floors Mr. Fountaine's argument of keeping the fruits entirely out of doors to secure flavour. When I say Mr. Fountaine's system can be adopted with success I am again pointing to the £ s. d. view. My returns of Grapes would have to be much larger than those at Chiswick, even were all these Vines at 8 feet apart loaded with fruit.

Reference is made to Mr. Barron's paper on the gardens at Blenheim, and his remarks on the orchard house *à la Fountaine*, &c. It so happened that Mr. Barron, when speaking of his non-success with the house at Chiswick last season, made mention of the fine trees at Blenheim when he visited the gardens a few years ago. They were then new to the place, but offering to do well, and I have no doubt but they did well under the able management of the then gardener, Mr. Lee. Of course a vinery could not have then been established, but I am told the Vines which were planted offered to be a success, but they were hurriedly rooted out. If Vines had been in the structure when I came I would certainly have retained them, and treated the whole system as recommended, and endeavoured to do *à la Fountaine* justice.

I do not know if Mr. Fountaine hints ironically at my having "created great improvement." I answer, No; as many things are left undone which ought to have been performed, and things have been done which, if they had not to answer a purpose, should have remained undone. My "£ s. d.," which Mr. Fountaine notes, may mean the same thing as the "£ c." after "*à la Fountaine*."

Those who are interested in fruit culture should by all means accept Mr. Fountaine's advice and go to Chiswick, see the

cheap house there, and I have no doubt but all will consider the invention a very interesting contrivance; and Mr. Barron, who is most courteous to visitors, will give every information on his experience with the system à la Fontaine as he did to me.

The last idea promulgated in Mr. Fontaine's paper is that "the open air is the life and soul of stone fruit." So it is when our changeable seasons are warm and dry—but not so last year and 1860—at least compared with the same kinds grown under glass with plenty of air passing through them. The fresh air could always be at command through the ventilators, at the same time the fruit was kept from the cold damp which is deleterious to the finer kinds of stone fruits. It is a well-known fact that Peaches and Nectarines have been and are annually produced under glass, such as are not surpassed for flavour in the open air in the most favoured districts.

I have now touched on the principal points noted in Mr. Fontaine's paper, and need add little, as it can be easily seen that I have undone nothing that was established in the orchard house here, and I have not had, nor am likely to have, any opportunity of growing Vines in the house, as my employer (who has made this house a speciality) is strongly opposed to it, and I think that I ought to make the best of it as it is—save expense and labour. Both have been on the increase of late years in most places. I have made inquiry to-day (April 29th) why the Vines were taken out of the house, and the reply naïvely given was that the house was such a weakly fabric that it was feared a crop of Grapes would pull it down. It had become twisted and was apparently losing its hold, but bars of iron and bearers were placed to hold the roof together, and now that the putty is replaced and painting going on it will look as comely as any of the other twenty houses on the place.—M. TEMPLE.

#### EARLY-RIPENED PEACHES.

In page 330 of your issue of April 23rd, in reference to the Early Beatrice Peach shown by Captain Ashby's gardener at South Kensington on the 15th of April, you state that "We doubt if Peaches were ever ripened on the 31st of March in England before." You are in error there. I have a Knightian medal that I received from the late Dr. Lindley for Peaches exhibited on the 18th of April, 1843. The first of these was gathered on the 7th of April. In the *Gardeners' Chronicle* of the following Saturday the Doctor had a leading article on them. Now, it must be borne in mind that the above were not the small Early Beatrice, but fine Noblesse. You will see from this that an allowance of several weeks must elapse between the ripening of a very early and a late sort. Well, the following year I gathered a ripe Noblesse on the 23rd of March, as can be seen by referring to "London's Magazine" of that year.

You also state that "Some of the members of the Committee remarked that hitherto it was considered skilful cultivation to have such fruit in May." Why, I have known them ripe in April for at least thirty years. My old friend Mr. Gardiner, at Weston House in Warwickshire, has taken prizes for Peaches several times in April. I believe Mr. Marnock, when at Bretton Hall, ripened Peaches in April before I did.

Had the Early Beatrice, or Rivers's Early, been in being when I used to force Peaches early I would have had no trouble in producing them in March.—W. HUTCHINSON, *The Gardens, Llynndu Court, Abergavenny.*

#### WHAT IS THE USE OF PROTECTING?

THERE was a frost on the night of the 1st of May. At ten o'clock my gardener, seeing it was coming, took some canvas which had been used to protect Peach trees and that had been taken down, and threw it over some Potatoes whose haulm was about 6 or 8 inches high. To his utter surprise, when he took it off in the morning he found that most of the plants underneath had been injured by the frost, while those that had been left uncovered stood firm and uninjured. I imagine that few of your readers would believe this to be possible, and yet I myself saw it. Now, what explanation can be given of a fact so strange? and of what use will it be henceforth, or has it been in time past, to hang canvas in front of our walls under the idea that it will protect the trees from frost?

I know that harm is done by any protecting material that touches the leaves of a wall tree and heats their tender brittle tissues in the hour of their weakness; but here there was no

movement in the sheets of canvas which lay stretched out on the ground, and as a veil they were worse than useless.—WYESIDE.

#### PRE-PUBLISHING THE NAMES OF JUDGES.

LONG ago you started a suggestion that the names of the judges ought to be published in the schedules. I send you a schedule by the post, by which you will see that we have always carried out the suggestion, but I do not observe that it is generally acted on by societies. Could you not make the suggestion afresh? One of the great drawbacks in many places is the incompetence of the judges, and the partiality and bias of local men. If exhibitors are to have confidence in the management they ought to know that the judges are above suspicion as to both ability and integrity. The publication of names can alone enable an exhibitor to judge whether there will be fair play—too often wanting at provincial shows.—G. F. BARRELL, *Hon. Secretary, Spalding Show.*

#### SAWING PRECAUTIONS.

THE following (fig. 1) represents the usual appearance of a cut-off branch, caused by cutting on one side, and the weight of the branch drawing over and splitting down the bark. A

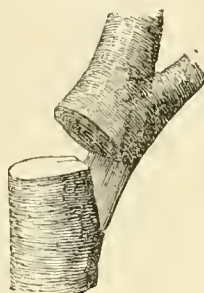


Fig. 1.

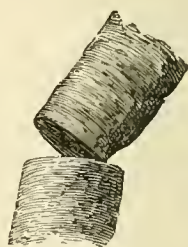


Fig. 2.

good workman cuts a little on one side first (see fig. 2). When it falls over, it then comes off with a clear smooth surface. After large branches are cut off, the wood should be painted or tarred to keep the wounds from decaying until the bark grows over. Very small branches do not need this, as the bark covers them long before decay seriously commences.—(*American Gardener's Monthly.*)

#### PLAGIARY OF THE "FRUIT MANUAL."

HOGG v. SCOTT.

(Before Vice-Chancellor Sir Charles Hall.)

Counsel for the Plaintiff—Mr. Fischer, Q.C., and Mr. J. C. Wood. Counsel for the Defendant—Mr. Osborne Morgan, Q.C., and Mr. R. H. Sandys.

THIS was a suit instituted by Dr. Hogg, one of the Editors of THE JOURNAL OF HORTICULTURE, and the author and proprietor of the "Fruit Manual" and other horticultural works, against the defendant, Mr. Scott, a nurseryman of Crewkerne, Somersetshire, for the purpose of obtaining an injunction restraining him from printing, publishing, selling, or otherwise disposing of any further copy or copies of a work published by the defendant called "The Orchardist," containing any passages copied or taken from the works of the plaintiff called the "Fruit Manual," "British Pomology," and the "Gardeners' Year-Book." It appeared from the statement of Counsel on the part of the plaintiff that in the year 1868 the defendant published a work entitled "The Orchardist, or a Cultural and Descriptive Catalogue of Fruit Trees," and that in such work the defendant had copied to a very great extent, frequently verbatim, and at other times with slight or merely colourable alterations, from the "Fruit Manual" and the "British Pomology." It was not, however, until after the publication of the second edition of the defendant's book that the plaintiff became aware of the extensive piracy which had been committed, and which he only discovered by the fact being called to his attention by his manager. He thereupon obtained a copy of the defendant's book, and took the necessary steps to assert his rights. It was alleged that the publication of the defendant's second edition of "The Orchardist" was doing injury to the plaintiff in forestalling the new edition which the plaintiff was about to issue of the "Fruit Manual," the first edition of that book being out of print. The plaintiff's book contained two hundred pages, and it would seem

that the defendant had made no less than 610 extracts therefrom. The defendant did not deny making the extracts, but on the contrary pleaded that the time within which complaint could be made of any piracy in respect of the first edition had elapsed, and that consequently the plaintiff could have no relief with regard to any portion of his works which appeared in the first edition. Secondly, he contended that the plaintiff had acquiesced in the publication of the extracts in the first edition; and in support of this contention it was stated that soon after the issuing of the first edition a copy was forwarded to the plaintiff, and that considering the number of quotations which it was admitted had been made from the plaintiff's works, it must be presumed that he was fully aware of the fact from the merest cursory view possible of the work in question. Thirdly, it was contended, although very faintly, that no piracy of the plaintiff's works had been committed.

The defendant through his Counsel stated that he was perfectly willing to submit to an order restraining him from publishing anything in the second edition of his work which was not already in the first—that is to say, any new matter then introduced for the first time. This offer, however, was declined on the part of the plaintiff.

In reply to the defendant's contentions, the plaintiff submitted, that as soon as the discovery of the piracy took place immediate steps were taken to assert his rights; that there had been no acquiescence on his part; that although a copy of the defendant's work had come into his possession some three years ago, he had not looked through it, but had merely read one particular passage referring to a discussion which was then taking place in the horticultural world with reference to the Pommier de Paradis stock.

The VICE-CHANCELLOR, in deciding the case, said that the plaintiff was not barred by lapse of time in claiming the relief he asked. Upon the second point as to the acquiescence, he said that it appeared to him not necessary in the view he took of it to say what was the true conclusion to be drawn, or the true legal inference to be derived with reference to the knowledge of the plaintiff at the time that the copy of the first edition of the defendant's book was sent to him, for it was perfectly clear that the plaintiff was, at the time he received the letter accompanying the book from the defendant, and which was relied on as giving him knowledge of the contents of the book, the undoubted legal owner of the copyright; it was his property, and he had a right to say to the defendant, "That is my property, and I don't choose to allow you to use it." He did not, however, take any steps founded on that right until the filing of this bill in 1873, and he thought it might be assumed in favour of the defendant, that the plaintiff had knowledge of the defendant's continuing to publish and sell the first edition from the time when the copy was sent to him. He published it for two years afterwards, and then it was that the defendant determined to publish a new and very much enlarged edition of his work, and which, as it ultimately turned out, contained many further extracts from the plaintiff's works. With reference to the question whether the non-taking proceedings on the part of the plaintiff in respect of the matters contained in the first edition for so long a time was or was not a bar to the plaintiff's rights in a Court of Equity, be considered that it did not amount to what must be made out by the defendant in order to succeed—namely, that such a state of circumstances had arisen that the Court was satisfied the conduct of the plaintiff had led the defendant to incur expense and labour with regard to the preparation of the new edition which rendered it unjust and inequitable that he should now be restrained. The fact of the plaintiff having inserted an advertisement in one of his periodicals announcing the preparation of the new edition of the defendant's work did not in his opinion amount to that description of acquiescence in the defendant's dealings with the subject which must be taken to deprive the plaintiff of the right to the interference of the Court. He might well say, "I am aware you have been going on selling a book containing portions of my property for a certain time, but I now say that from this time forth I will not allow you to continue doing so. I have had no reason for supposing that you were laying-out money all this time in connection with this intended fresh publication. You may have been selling copies of your book which may have been printed and in your warehouse long before I knew anything about it. You did not tell me that you were making an expenditure and outlay in reference to your work, and it ought not to be assumed that I knew you were going on spending money on the faith of my not taking proceedings against you. It is my property; you have never come to me to ask me to give you that property in any proper or regular way, and I have a right to enforce my claims in respect of that property in a Court of Equity." It being the plaintiff's property, and the Court being bound to take notice of a legal right, and to determine whether the plaintiff had or had not that legal right, was the Court to withhold the remedy by injunction? He thought not. Then, with regard to the defendant's contention that the extracts made from the plaintiff's work in the first edition of the

defendant's book were so numerous that it was impossible for the plaintiff not to have discovered the piracy, he thought that that contention was hardly available under the circumstances of the case with regard to acquiescence; but when the question of piracy came to be considered, it was certainly a very cogent and convincing argument the other way. Therefore, he must decide both points against the defendant. He thought the defendant had been content in a great number of instances to take the plaintiff's description of the fruits, and not go to any other source of information, and that it was clear to his mind that the defendant did not go to that source to which the plaintiff himself had gone for the purpose of arriving at a true conclusion—namely, taking specimens of the fruits themselves and writing his own descriptions. To his mind it was as clear a case of copying as he had ever seen. Then with regard to the contention that the same fruit could only be described in the same words, he thought that the English language must be very poor indeed if it did not allow of different expressions being used in this respect. Upon the whole of the case he thought the defendant had entirely failed in every one of his contentions, and that consequently the plaintiff was entitled to the relief he asked—namely, an injunction restraining the defendant from selling and publishing the matter complained of, together with the costs of the suit.

### NOTES AND GLEANINGS.

THERE is a specimen of *Cycas revoluta* here (Nash Court, near Faversham, Kent), which has produced thirty-six fronds this spring. In former years nineteen fronds were the most. Many gardeners who have seen this specimen think that thirty-six fronds to be produced at one time is a little out of the common. The plant is about fifteen years old; spread of old fronds, 7½ feet. The new fronds are stronger, and will probably have a spread of 8½ feet. Has any one of your readers seen or heard of a *Cycas* with a like number?—C. M. McCrow.

— THE FLORAL DECORATIONS at the Mansion House ball in honour of the Duke and Duchess of Edinburgh on the 29th of last month, were of a very handsome and extensive character, and many new plants never before used in any previous decoration were displayed in the Royal supper and reception rooms. Amongst these were the beautiful and graceful *Aralia Veitchii*, *Cocos Weddelliana*, *Maranta Makoyana*, *Pandanus Veitchii*, and many rare Palms, Orchids, &c. Upwards of two tons of Ivy were used in draping the pictures, mirrors, walls, &c., of the various rooms and halls; and amongst the cut flowers upwards of two thousand blooms of *Maréchal Niel* Rose formed a magnificent display, together with large quantities of *Stephanotis*, *Gardenias*, &c. They were all supplied and arranged by Mr. John Wills, Royal Exotic Nursery, Sussex Place, Old Brompton.

— THE SALE OF H. L. MICHOLLS, ESQ.'S COLLECTION OF PLANTS took place at his residence, Southgate House, Southgate, Middlesex, on the 28th and 29th of April. Mr. J. C. Stevens was the auctioneer. There were 639 lots, and they realised £1644 17s. Of the *Azaleas Stella* (5 feet by 4 feet), was knocked down for £10 10s.; *Chelsoni* (5 feet by 4½ feet), £11: of the *Heaths*, *Erica Cavendishii* (4 feet by 4 feet), for £9; *E. Shanoni* (4 feet by 3 feet), £9 10s.: of miscellaneous plants, *Aphelexis macrantha purpurea* (5 feet by 3 feet), £11 11s.; *Hedera tulipiferum* (4½ feet by 4 feet), £16; *Dasyliion acrotrichum*, £12 12s.; *Gleichenia rupestris* (7 feet by 5 feet), £19 19s.; *Cocos Weddelliana* (8 feet by 7 feet), £29; and, highest of the high, "Anthurium Scherzerianum, one of the original plants, and the finest specimen with the highest-coloured flowers in existence," £66.

### A NOVEL SUBJECT FOR THE SPRING GARDEN.

OF the value of the Golden Feather *Pyrethrum* for playing an imposing and effective part in the matter of spring or summer bedding, it would be a work of supererogation to say even a word.

Therefore we venture to bring under notice a novel subject, which appears to us to be well calculated, if not to rival, at least to form a companion plant for the *Pyrethrum*, and play a similar part in the flower ground, with little less but somewhat varied effects. The subject whose claims to notice we now put forward is a homely one, but not the less to be appreciated, we hope, on that account. Like the Golden *Pyrethrum*, it can boast no exotic or alien parentage. Our plant is the golden-leaved variety of the common purple *Lamium*, or, as it is known botanically, *Lamium purpureum* var. *aureum*. In this we have a low-growing, perfectly hardy plant, easily pro-

pagated as Mint, with foliage of a different character from that of the Pyrethrum, but richer and more intensely golden, a pleasing variety and play of colour under certain lights being further produced by a slight silvery streak or patch in the centre of each leaf.

Altogether we regard the Golden Lamium as a very promising subject for the flower gardener to take in hand, and we shall be disappointed if those who venture to do so will not have reason to feel indebted to us for directing their attention to

and consists of nine pairs of leaflets, which are small, ovate, deeply cut into two or three lobes on each side, the larger lobes being sometimes also toothed. The leaves, from their size and form, are strongly suggestive of fronds of some small-growing pinnate Asplenium, *A. viride* for example. The growth and general character of the plant is so elegant that whether cultivated as a small pot plant, trained on globular or other trellises, or planted as a climber, it has a most charming and engaging appearance. The flowers are as yet unknown.



CAMPSIDIUM FILICIFOLIUM.

this lowly, but, withal, richly endowed little plant.—(*Irish Farmers' Gazette*.)

#### CAMPSIDIUM FILICIFOLIUM.

HITHERTO the only species known is *Campsidium chilense*, and if it belongs to the same genus it is of the natural order Bignoniaceæ. We are indebted to Mr. W. Bull, Nurseryman, King's Road, Chelsea, for the portrait of this plant, and the following is extracted from his catalogue, just published:—

"A free-growing, slender, woody climber, from the Feejee Islands, and referred doubtfully to *Campsidium*, from the analogy of its foliage. It has opposite impari-pinnate leaves, which are about 5 inches long, including a petiole of 1 inch,

It has received first-class certificates both from the Royal Horticultural and Royal Botanic Societies."

#### NEW BOOK.

*Wood and its Uses: A Handbook for the Use of Contractors, Builders, Architects, Engineers, Timber Merchants, &c., with Information for drawing-up Designs and Estimates, with upwards of 250 Illustrations.* By P. B. EASSIE, &c. Gloucester: W. Eassie & Co.

THIS is one of the most useful books we know, and if where it can be had in London were known and advertised, it would soon obtain a large sale. It tells how to select woods of all kinds; how to construct flooring, joists, girders, roofs, doors,

windows, staircases, glazed garden structures, and other buildings, besides fittings and vehicles, &c. Not only are directions given for making, but dimensions and lists of expenses. We extract some of the contents relative to greenhouses, which will enable our readers to comprehend at once the contents of the volume.

"In erecting glass houses of any kind, considerable importance attaches to the position assigned to it: if the structure is a detached one it should be sheltered from the northern winds with tall-growing trees, close enough to break their force, but not so close that their branches may drip on the glass, and it should also be near an abundant supply of water, independent of what may be collected from the roof, a point especially indispensable in hot forcing houses of every description. Lean-to houses should have a south-eastern aspect whether for fruits or flowering plants, the morning sun being more strengthening and exhilarating than at any other period of the day. Span-roof houses should stand north and south, with the longer elevation towards the east and west. Conservatories attached to the dwelling house may be regulated by the position of the building or the fancy of the architect, but should be transparent or of glass on all sides, since plants grown in lean-to's can never be made handsome, seeing that they become weakly and distorted by continual stretching towards the light. Plants will not thrive without plenty of light, and must receive its direct influence by being placed near the glass, hence the extensive use of trellises of wood or iron to which the trees are trained. Trellis-work is not to be recommended, however, on the back walls of lean-to's, for if the surface of the glass in the roof is sufficiently covered with foliage there is little to be

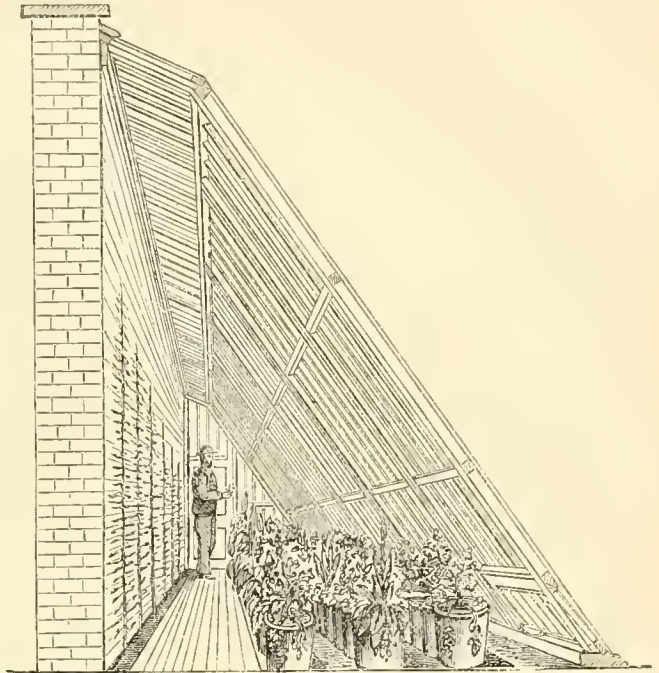


Fig. 147.

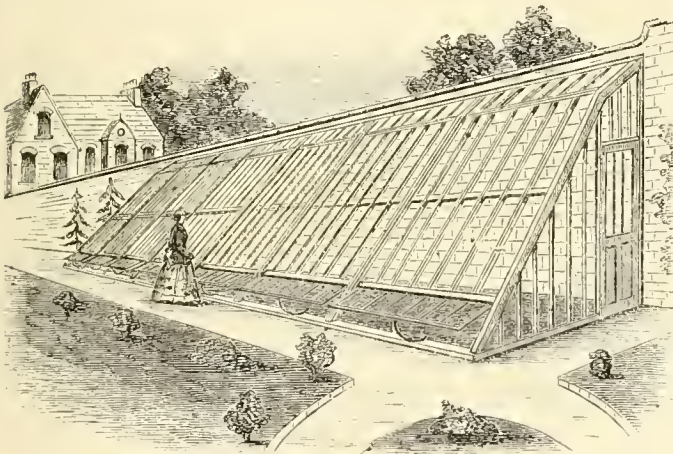


Fig. 148.

nearer to each other. Proper ventilation is the most important item in the management of hothouses; the builder has done his part when he has arranged for the front and a portion of the roof sashes being opened, but the gardener must use his judgment as to when and under what conditions he reduces at any time the interior temperature of the house to that of the exterior, and this forms a most important portion of his art.

"As a guide, we here call the attention of our readers to a class of house, amongst the most economical yet introduced, in which good construction, arrangement, portability, and cheapness are combined. They are adapted to all kinds of gardens, and are so constructed as to obtain the most reliable and complete system of ventilation, while they can be removed and refixed at the expiration of a tenancy without disturbing a single pane of glass. These houses are composed of lights of one uniform width—viz., 4 feet 8 inches, and are made any lengths from 8 to 16 feet; all the roofs, sides, and ends being

gained by training on the back wall, except in the case of Figs, which are found to do better in the shade. Wire is the fittest substance for trellis-work, and can be procured galvanised to prevent rust. Lately great attention has been paid to this necessary art, and there are numerous manufactories supplying all the needful strainers, holdfasts, &c., either for the internal portion of glass houses or out-door espaliers. The interiors of greenhouses are generally provided with a stage in the centre and shelves round the sides, on which the plants are arranged. The angle of the centre stage for a promiscuous collection of plants should never exceed the angle of the roof, but should be a little flatter, so as to admit of larger plants being placed on the upper shelves, thus giving a larger and more effective appearance from the inside. Three or four rows are sufficient, the upper shelves being about twice the width of the others. The lowest should not be less than 12 inches wide, and the rise about 8 or 9 inches. For small plants, propagating houses, &c., of course the stages may be much

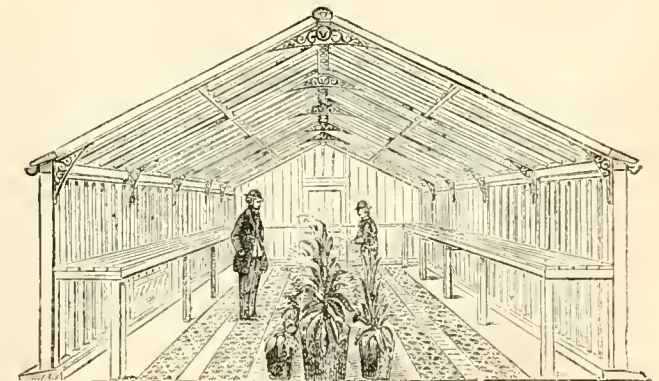


Fig. 154.

thus constructed without rafters or framing, it leaves little or no obstruction to the light.

"The system of ventilation in the roofs and sides is such that each light contains its own ventilator; and this being rendered within the thickness of the sash, ensures economy in packing or transit. The lean-to houses with side lights are constructed so that either all the front or the roof lights may be opened, or each alternate one only. For lean-to houses without front lights the ventilator is placed under the sill, in openings left for that purpose in the brickwork; the air in the latter case is thus not admitted in a direct current against the plants, but below them and immediately over the hot-water pipes, by which it is slightly tempered on entering the house. The span-roof houses are ventilated at each of the gable ends, also along the full length of ridge, and at each side.

"In vineries and Peach houses the framework may rest on piers, the space between them being filled in with an embanked border. This necessitates side lights, but in many instances, when used for other purposes, no brickwork or other foundations will be required.

"Figs. 147 and 148 are internal and external views of these lights adapted as Peach and wall covers, no brickwork, but simply the levelling of the ground, being required. The following are the best respective internal widths and heights of these houses when erected—viz.,

Length of Light.	Width of House in clear of Wood Sill and Wall.		Height of Back Wall Covered.	
Feet.	Feet.	Inches.	Feet.	Inches.
10	6	9	9	2
12	8	1	11	0
14	9	5	12	9
16	10	11	14	7

"Figs. 149, 150, and 151 are views of the lean-to houses with side lights 4 feet 6 inches high, and for which also no brickwork is required. They form excellent greenhouses for plants, with a flat stage in front and sloping stage at back. The internal dimensions formed by the different lengths of lights used as lean-to's, when placed at the extreme angles of 25° and 40°, are as follows, when erected—viz.,

Length of Light.	Angle.	Width in clear of Wood Sill.		Height of Back Wall Covered.	
Feet.		Feet.	Inches.	Feet.	Inches.
8	25°	7	0	7	11
	40°	5	10	9	8
10	25°	8	10	8	9
	40°	7	4	11	0
12	25°	10	7	9	8
	40°	8	11	12	2
14	25°	12	3	10	6
	40°	10	4	13	6
16	25°	14	3	11	6
	40°	11	9	14	10

"For Melon and Pine pits with sunk pathway, as shown in figs. 155 and 156, in the section of which we show the position of the pipes for bottom heat, the angles most in use range from 30° to 35°. The annexed table gives the various internal dimensions of lean-to's:—

Length of Light.	Angle.	Width of House in clear of Wall.		Height of Back Wall from Ground Level.		Depth of Floor below Ground Level.	
Feet.		Ft.	Ina.	Ft.	Ina.	Ft.	Ina.
8	26°	7	0	4	7	2	6
	35°	6	4	5	9		
10	26°	8	11	5	4	3	0
	35°	8	1	6	10		
12	26°	10	9	6	4	3	0
	35°	9	8	8	1		
14	26°	12	8	7	1	3	0
	35°	11	5	9	3		
16	26°	14	6	7	11	3	0
	35°	13	1	10	4		

"When used as span-roofs, the width in clear of sills will be a few inches more than double the above. The 8-foot houses are the cheapest and most efficient for sheltering plants and small fruit bushes in winter, and with suitable heating apparatus may be used for Cucumbers and Melons. The 10-foot span-roofs form first-class plant houses, feeders to conservatories for the growth of Rhododendrons, Azaleas, &c. It will be observed that these houses are a mere collection of roof and side lights, all being of the same size in width but

varying in length, and for which glass is kept of uniform sizes largely in stock. They are thus supplied at a moderate cost. Manufacturers glaze them with 21-oz. glass in panes 10 inches wide at about 12 per cent. extra to the prices here given.

"Figs. 147 and 148 show these lights arranged as wall covers, being thus extensively used near Swansea and other towns where the atmosphere is vitiated by the fumes from smelting works, chemicals, smoke, &c. Their cost per foot run including the two ends and one door at the manufactory, divided into two classes, first for the woodwork primed, and secondly painted four coats and glazed complete with 15-oz. glass in panes about 15" x 7", and including all gutters, down pipes, locks, hinges—in fact, with all ironmongery complete, tie rods and columns are as follows, the cost varying considerably in proportion to the length, these being taken at 98 feet and 14 inches long respectively:—

Woodwork Primed only, but with all Ironmongery.			Wood and Glass, Painted Four Coats, with all Ironmongery.		
10 feet lights.	s. d.	s. d. per	10 feet lights.	s. d.	s. d. per
12 "	14 3	to 20 9 "	12 "	21 3	to 30 9 "
14 "	15 9	to 23 6 "	14 "	24 3	to 36 9 "
16 "	18 3	to 29 6 "	16 "	28 3	to 41 3 "

"Fig. 154 is a view of the same kind of house arranged as a span-roof, and the cost classed as before at the manufactory, the lengths being taken at 98 feet and 14 feet respectively are as follows:—

Woodwork Primed only, but with all Ironmongery.			Wood and Glass, Painted Four Coats, with all Ironmongery.		
8 feet lights.	s. d.	s. d. per	8 feet lights.	s. d.	s. d. per
10 "	21 9	to 31 0 foot run.	10 "	35 0	to 48 9 foot run.
12 "	28 0	to 39 9 "	12 "	43 0	to 60 9 "
14 "	35 0	to 49 3 "	14 "	52 3	to 74 0 "
16 "	42 9	to 59 9 "	16 "	62 3	to 89 3 "
16 "	51 3	to 70 0 "	16 "	72 3	to 103 0 "

## NOTES ON VILLA AND SUBURBAN GARDENING.

*Snails and Slugs.*—By the former I mean those with shells, and by the latter those which are not provided with such an accommodation. Both kinds are very rapacious, and commit sad havoc in a little time if their inroads are not watched. Snails do not burrow, and therefore they are more easily caught. Look for them in the winter in the chinks of walls and the hollows of the roots of old trees. If you have Ivy in your garden you will find that it is their favourite resort for hibernating, and there you will seldom look in vain. I once collected half a bushel of snails from a wall which had been covered with Ivy for many years. The fact is these creatures increase very fast in the autumn, when, as it is beyond their power to do much injury, they are allowed to crawl with impunity in the rank vegetation. The first frosts drive them to their winter quarters, and you will find them in large masses, sometimes looking like conglomerate or plum-pudding stone. The winter, therefore, should never be allowed to pass without a search being instituted, so that they may be taken in their retreats collectively, by which much loss of time and vexation may be prevented in spring.

In gardens of moderate size hand-picking is recommended as the surest mode of keeping under both slugs and snails. This may be done in the daytime when the weather is moist. In the kitchen garden you will find the enemy at the stems of Lettuces and Cabbages, and in the flower garden among the Box, or at the edges of the turf which skirts the beds. Practice will tell you where to look, and an experienced eye will allow but a few to escape, provided time enough be given to the work. As slugs burrow in the ground it will be necessary to trap them. This is done by strewing Cabbage leaves on the spots they frequent, or where their ravages are to be feared. Hand-picking and trapping will soon relieve you from the fears which the amateur sometimes experiences when in early spring all his handiworks are threatened with destruction. In a small garden they may be, and ought to be, nearly extirpated; and when we see such little spots covered with slimy traces we conclude that carelessness has secured them an impunity and favoured their propagation.

It is well known that powdered quicklime is fatal to slugs if it falls on them in very small quantities. If the land is much infested this remedy should be adopted, a still damp evening being chosen for the purpose. But this is an untidy procedure for a flower garden; lime water is more useable, and may be applied with success at the stubby stems of Hollyhocks, &c., where the eye cannot conveniently reach. But lime water often fails if only once used, the dose should therefore be repeated. I have often tried experiments on slugs with lime water, and sometimes they will cast off the slough and crawl away appa-

rently all the livelier for the infliction, but if you then again sprinkle them they soon die. A piece of quicklime as large as your fist will be enough for a pail of water. When it is dissolved let it settle, and pour-off the water clear.

But what is to be done with the guilty parties when they are in safe custody? This question has sorely perplexed many gardeners, especially those of the gentle sex. Ladies do not like killing, and such substantial things as snails are not despatched easily.

I have known persons whose gardens are bounded by green fields throw all the slugs and snails over the walls to regale themselves at the expense of their neighbours. This is manifestly a breach of the golden rule; besides, our object should be to lessen the number of injurious insects in the country. If the ground of the farmer is infested with these creatures neighbouring gardens will not escape. The walls will be surely though slowly scaled, and the fee will return to the scene of his former pleasures.

Peas which are now growing rapidly should be earthed-up, after which they should be sticked, taking care to use the shortest sticks for dwarf-growing varieties. Sow for a succession whenever the last put in are appearing through the ground. By observing this rule a constant supply of Green Peas may always be had during their season. The same thing holds good in sowing Beans; the soil between the rows of these should be stirred up, and a little earth drawn to their stems. Sow Radishes often in order to have them young and tender; and to have a succession of Spinach observe to sow as soon as the last sowing makes its appearance above ground. Sow in drills between the rows of Peas and Beans. Artichokes should now be dressed, clearing-off all superfluous suckers and digging-in good manure among the stools. Asparagus beds should also be forked-up, taking care in performing the operation not to injure the crowns of the roots. Where the soil is dry and warm Kidney Beans might be put in. Draw the drills rather shallow, placing the Beans about 3 or 4 inches apart and covering them about 2 inches in depth. Let plantations of Strawberries be cleared of weeds; and as the season is drawing near when we may expect a visit from Gooseberry caterpillars, it cannot be too often repeated that good powdered hellebore destroys them. Whenever the pests make their appearance take a small muslin bag filled with the powder and dust the trees that are affected. Let the amateur secure a sowing forthwith of Scarlet Runners, a couple of rows about 5 feet apart, and the sticks from each row meeting overhead, as an arcade, have a very good effect, and this is altogether a serviceable plan. Runners delight in a rich soil. A couple of rows about 8 feet apart and running north and south afford an excellent situation between them for a raised bed of Cucumbers.

A few annuals may be sown in patches, such as Collinsias, Clarkia, Chryseis, Malope, Iberis, Carnation, and Dwarf Poppies. The Mimulus family, the Forget-me-not, and other useful little plants, as also Pansies, may be transferred with balls to fill-up blanks.

Mow lawns, sweep walks. Thoroughly dress all beds and borders. Prepare stations on lawns for extraordinary specimens of ornamental plants, as large Fuchsias, Geraniums, and Veronicas, &c.; drainage in the bottom and good turfy mellow compost above. Trim and prune all climbers on out-door trellises, and prepare stations to fill-up blanks. As Crocuses and other bulbs will now be on the wane, patches of biennials which have stood the winter may be planted close beside them. When the annuals are decayed the bulbs, if necessary, may be removed at the same time.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### KITCHEN GARDEN.

On Friday morning the thermometer registered 5° of frost, a sufficiently low temperature to cut-off the Potatoes which were through if the ground had not been dust dry and the plants somewhat sheltered. Plants that were through the ground in the open field were much injured. The same variety on a border facing south and sheltered by a boarded fence was slightly injured, while plants on an east border sheltered by a wall were not touched in the least, proving that the heat retained by the wall in the day is given out at night, and is a protection to tender plants.

We have *Cauliflower* plants ready to plant out. The seeds were sown early in a hotbed, and the plants have been pricked-out in boxes, care having been taken that they had no serious check to their growth. The ground is dry, and drying east winds are prevalent, so that it will be much better to wait until rain come, but if the plants are removed carefully from the boxes and planted in freshly-drawn drills with a trowel they will not receive any serious check. Some persons would pull such plants up without any care of the fibrous roots, and plant them with a dibber; this would not make so much difference in warm showery weather, but in such weather as we have had recently success would be problematical.

Early *Peas* are in full blossom, at least William I. (Laxton);

it is much earlier than Alpha of the same raiser, and is one of the best, if not the very best of early Peas for exhibition. The pods are very large and of a deep green. Taber's Perfection, the best strain we ever had of Sangster's, used to be our favourite, but it is quite displaced now. Blue Peter is about eight days later than William I., but it is certainly one of the very best dwarf Peas that has yet been introduced, and is sure to become a favourite for small gardens. It will do very well without sticks, but if a few sprays can be stuck in (about a foot high) it will be better.

*Vegetable Marrows* should be potted singly in 6-inch pots; if this has been done and the plants are thriving, preparations should be made to plant them out. In the north it is necessary to throw-up a ridge of manure to raise a gentle heat in the bed, and when the plants have filled the pots with roots plant out and cover with a hand-light until they are established. In the neighbourhood of London the market growers sow their seeds in the open ground late in May, and cut abundant crops. In private gardens three or four plants will be sufficient for a large family, and it is little trouble to sow in heat and plant out under hand-lights on any rich soil.

We have kept the heels well at work, and the ground is very loose on the surface, thirsting for rain, which would be very acceptable both for the tanks and all crops in the open ground. Planted Runner and Dwarf Kidney Beans. Hoed and earthed-up Broad Beans.

### FRUIT AND FORCING HOUSES.

*Pinerias*.—We never strive to raise any houses to a particular temperature by artificial heat. Some gardeners will insist on the thermometer being kept at the same height at a given hour of the night. It is well to allow a margin of 3° or 4° for variations of temperature outside. At the present season a Pine house may run up to 90° after it has been shut up in the afternoon with but little assistance from fire heat, and on the following day a change in the weather would necessitate much firing to raise the temperature to 80° at the same hour. Under such circumstances it would be folly to expect the thermometer to stand at the same height at 8 or 9 p.m. In the first instance 75° would be a proper temperature at 9 p.m., and in the latter 70° would be high enough. It is a very easy matter to overwater Pine plants, and especially these plants approaching to ripeness. It would be bad management to allow such plants to become so dry that the soil cracked away from the sides of the pots; if ordinary care is taken there will not be much danger of this, but there is very great risk of the plants suffering from the soil being over-moist. In the early period of our Pine-growing experience the bottom heat used to be a considerable source of trouble, and the beds were frequently turned over. This is a mistake. Even if but little new material was added to the beds, turning them over would alone raise the temperature from 80° to 100° or more, and this excitement acted injuriously on the plants. We now find that by having the plunging material of less depth, and not turning it over so often, a more equable temperature can be maintained from hot-water pipes underneath, and undue excitement is avoided. We also warn growers to be careful how they introduce fresh stock to their houses if their own plants are clean. It is very seldom that a new variety of Pine Apple requires to be introduced. Queen and Smooth-leaved Cayenne will hold their own for many years to come. Should any plant become infested with scale remove it to a house by itself, and hand-wash with strong soft-soap water as hot as the hand can bear it. Air the houses cautiously when cold winds are blowing. Queens are changing colour, and others swelling rapidly. When the fruit is in the earliest stages of development weak guano or any other manure water may be given at each alternate watering, but not when the fruit is approaching the ripening stage, as it often causes it to become black at the core.

*Cucumber and Melon Houses*.—All experienced gardeners know how much drying east winds favour the development of aphides and other insect pests out of doors; inside they also increase freely. On their first appearance means must be at once taken for their destruction. It has been necessary to fumigate both Melons and Cucumbers for green fly. Much care is necessary, as the leaves of Melon plants will not stand a strong dose of smoke. The plants are also syringed to destroy red spider; painting the hot-water pipes with sulphur is of no use, as the leaves will not stand so much of the fumes as the red-skins. We recommend painting the pipes with sulphur in vineries, because year after year we have proved that the red spider can be killed without injuring the Vine leaves. With a magnifier we have seen them hanging in the downy substance underneath the leaves dead next morning after the pipes were painted. We must tell Mr. W. Taylor, who writes in last week's number, that we do not recommend this practice "because our fathers did it," but because we do know that a house of Vines can be freed from the pest by doing so. We have been thinning-out and training the growths of Melon plants. It is a great evil to allow the house to become crowded with leaves. An experienced grower knows how many growths to pinch out in the early stage

of the plant's life. Some sorts require much more thinning-out than others. Plants that are trained to a trellis have a centre stem and a number of side shoots; as a rule every alternate side growth ought to be cut out, and the shoot on which fruit is set should be stopped two leaves beyond the fruit; all after-growths to be stopped at one leaf.

**Orchard House.**—Here it has been necessary to make a fresh arrangement, the trees, which were placed in thickly to set their fruit, had become overcrowded. In the first place, all trees on which little or no fruit had set were removed out of doors. Plums have set well, but Pears very badly. When Pear trees are in flower the atmosphere of the house should be as dry as possible, and the ventilators should also be kept open a little at night. If it is necessary to shut them owing to frosts, open as early as possible in the morning. The trees which have been kept in-doors are mostly Peaches, Nectarines, and Plums. The fruit on most of the trees has been thinned, leaving three times as many as will be allowed to ripen. Pinched the growths closely back on Plum trees, as they are as large as required. The trees are thoroughly syringed night and morning, freely supplied with water at the roots, and it has also been necessary to fumigate to destroy aphids.

#### GREENHOUSE AND CONSERVATORY.

In houses where the largest proportion of the plants consists of those of a softwooded character there is very much more re-arranging required. Cyclamens and Cinerarias are now past, and Calceolarias, Pelargoniums, &c., take their place. These have had sticks placed to the flower stems and the houses fumigated to destroy fly.

A few words may not be out of place as to potting Stage and Fancy Pelargoniums. In many instances that have come to our knowledge these plants have been overpotted. Young plants that were struck from cuttings last summer will flower better and ripen the wood much more satisfactorily if the pots in which they flower are not more than 5 inches in diameter. Noble specimens, 6 feet in diameter, flower well, and the flowers are of the best quality, in 8-inch pots: larger than this is not only unnecessary but positively injurious. This applies to both the Stage and Fancy section; the first require a few sticks to hold up the trusses, the latter are better without them. It is necessary to keep a sharp look-out for all plants that are liable to be attacked by red spider, and to syringe them daily.

#### FLOWER GARDEN.

All bedding plants are now being hardened-off. The hardiest are in turf pits, the more tender in heated pits and glass frames. The lights are removed entirely in the day, and this is a matter not at all well attended to in small gardens; sometimes the lights are not removed until midday; this we witnessed the other day; a frame full of bedding Calceolarias was shut-up closely until nearly 2 P.M., and the appearance of the plants betokened that this was no unusual treatment. Our own Calceolarias are now in open trenches, and it is not at all necessary to cover them at night. Spring-flowering bulbs are nearly over; the Hyacinths were very unsatisfactory, the flowers being damaged by wind and rain. The beds are now being cleared of their occupants, mowed, and dug for the summer bedding. Planting the last of the Gladioli; we do not like to be later than the first week in May, as very late planting does not give the bulbs a good chance to ripen. The Rose maggot is now active; armed with a pin an active lad makes short work of them. There must be no delay, otherwise the very best buds will be destroyed.—J. DOUGLAS.

#### PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

MAY.		JUNE	
Gloucester and Cheltenham	7	Leeds	10, 11, and 12
Glasgow	8 and 9	Gloucester and Cheltenham	11
Bath	13	Royal Oxfordshire	16
Royal Jersey	13	Chertsey	17
Cambridgeshire	20	Burton-on-Trent	17
Royal Horticultural of Ireland	21	Thorne	17
Manchester	22 to 29	Jersey	17
Southampton	25	Guildford	17
Blackburn	25, 26, and 27	York	17, 18, and 19
Devon and Exeter	29	Fermoy	18
		Nottingham	24
		R.H.S. of Ireland	25
		Cambridgeshire	25
		Thetford	25
		Ipswich and E. of England	25 and 26
		Devon and Exeter (Roses)	25
		Boston	30 and July 1
JUNE.			
Glasgow and West of Scotland	3		
Undercliff	3		
St. Ansell	3 and 4		
Covevort and Warwickshire	8		
Bath and West of England	8 to 12		

#### TRADE CATALOGUES RECEIVED.

George White, 3, Moss Street, Paisley.—*Catalogue of Florists' Flowers, Herbaceous, and Bedding-out Plants.*

William Bull, King's Road, Chelsea, S.W.—*Retail List of New, Beautiful, and Rare Plants.*

James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Bedding Plants, Florists' Flowers, &c.*

J. Linden, Ghent, Belgium.—*Catalogue of Stove and Greenhouse Plants, Orchids, Palms, Ferns, New and Rare Plants, &c.*

#### TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

GRAPES NOT SWELLING (Canada).—No wonder. Four out of every five of the berries should have been cut away as soon as they were as large as small peas. Thin the bunches at once, and water the roots copiously once a week. The roots cannot supply enough sap to such masses of berries, so some of them are "spotted."

GOOSEBERRY CATERPILLARS (A Tipperary Subscriber).—Dust them with white hellebore powder, syringe the next day with water, and repeat the treatment if needed. Whoever told you that "speak tanners' bark killed his bushes" either said "the thing that is not," or must have applied it full of the tanning liquor.

HOLLY LEAVES DISCOLOURED (Croydon).—The brownish yellow patches on the old leaves of the Common Holly so prevalent this year are caused by the grubs of a very small fly having only two wings, *Phytomyia ilicis*.

ZONAL AND COLOURED GERANIUMS (H. G.).—Botanically they are Pelargoniums, among the community Geraniums. There are many coloured portraits of Pelargoniums in the back volumes of "The Florist and Pomologist." We do not think the leaves though varnished would retain their colour: you can easily try. There is no publication directing how to produce bright-hued leaves.

PEAT (T. Nicol).—The specimen is more fuel peat, and I will not do for potting purposes. Write to those who advertise Reigate peat soil, enclose some postage stamps and a directed envelope, and ask for a sample; you will then be able to judge for yourself whether any peat near you is like it.

APPLE BLOSSOMS KILLED (A. A.).—Night frosts and keen winds have killed the blossoms, and turned the edges of the leaflets brown.

PLANTING A CIRCULAR BED (An Inquirer).—Discard the Tom Thumb Geranium, and plant two rows of Golden Feather outside the Bed instead of one. Both the Golden Feather and Lobelia should be much closer together than you propose. Four to six inches is a suitable distance. Remember that your object should be to maintain a compact mass of colour, and to conceal the whole of the surface as quickly as possible.

PRUNING ERICA GRACILIS AND PYRAMIDALIS (M.).—These should have been pruned in March, but it may be done now, cutting-in all the irregularities of growth so as to produce compact plants. We cut each strong shoot of last year to within 2 or 3 inches of its base, leaving the small spray all over the plant, removing only the irregularities of growth, and forming the plants into compact pyramids. We have *E. gracilis* in the bush as well as the pyramidal form.

BEDDING GERANIUMS DYING (Alma).—From the stem sent we are unable to assign a reason for the plant's dying. It was perfectly healthy. If there was disease at all it was lower down on the stem within the soil, arising from injury in potting or putting-in the cuttings. This would produce decay and destroy the stem.

GLAZING CUCUMBER LIGHTS AND GREENHOUSES (R. D. D.).—We have both "butt joints" and laps. The water in wet windy weather comes in at the "butt" joints as if through a sieve, whilst with laps in the heaviest rains and most windy weather we have no drip. The laps are not less than an eighth nor more than a quarter of an inch. In four winters we have not had a cracked pane of glass, but in other structures with laps of fully half an inch the cracked and broken panes were many.

CACTI (Idem).—There is no work specially devoted to these. The "Candle plant" was, we think, some kind of Cactus, but we do not know one by that name. The Cacti are now referred to Epiphyllum, of which Ackermannii, anguliferum, Barbanceni, crenatum, crenatum sanguineum, flagelliforme, Jenkinsii, Mallissouii, Mallissouii roseum, episciosissimum, speciosum, speciosum superbum, truncatum; vars. albo-violaceum, aurantiacum, Bridgesii, Ruckerianum, Russellianum, Salmonium rubrum, splendens, and violaceum superbum are good. They may be had of most of the principal nurserymen.

SALISBURY ADIANTUM (Wm. T.).—It is only natural for the "foliage to turn yellow and fall off in autumn." It is deciduous and a handsome tree. It will now be starting into growth, and will continue in leaf until autumn, and from thence to April or May will be leafless. We should be glad to know if the female plant has been introduced or has produced fruit. The male and female flowers are borne on different trees. It has been suggested that the female flowers to secure fruit would be to graft female shoots on the male plant. Your plant is healthy if it only lose its leaves in autumn. A light, rich, loamy soil free of stagnant water, with a sheltered position, is all it needs.

APPLE BLOSSOMS' CRITICAL DAYS (Orchardist).—The middle of May is usually the fatal time, if night frosts or other ungenial weather then occur. In South Devon they consider the critical days are the 17th, 18th, and 19th of May. The 19th happens to be St. Dunstan's day, so the popular legend is that he, having a large brewing of ale, bargained with Satan to blight the Apple blossoms on those days, so that cider being scarce ale might be dear.

INSECT INFESTING MYRTLE (G. W.).—The insect on the Myrtle is thrips, which may be destroyed by syringing the plants laid on their sides, and turning them round so as to wet thoroughly the under sides of the leaves, employing a solution of soft soap, 3 ounces to the gallon of water, at a temperature of 90° to 100°. Repeat in about a week, taking care to keep the solution from the soil, and to wash the pots clean if any is squirted on them.

Place a piece of sack over the pot, it will keep the liquid from the soil and pots. The Vines you must not syringe with the soft-soap solution, but fill the house with smoke, employing the best quality of tobacco paper, and filling the house so that a plant cannot be seen from the outside, taking care to have the foliage of the Vines and plants dry, but the floor of the house wet. Choose a calm evening, shutting the house up closely. The fumigation will need to be repeated in three or four days, and again in a week if necessary. Keep the atmosphere moist.

**CAMELLIA TREATMENT** (*Camellia*).—The plants, now that they are making fresh growth, should be well supplied with water, never allowing them to become dry; in fact, if the drainage is good the supply can hardly be too liberal, but care must be taken that the soil do not become sodden by frequent, heavy, needless waterings, otherwise the plants will decay, the foliage become yellow, and the flower buds fall in winter. It is well to preserve a moist atmosphere and to syringe the plants twice daily; afford shade from bright sun, which should be continued throughout the summer. The sun falling powerfully on the leaves whilst wet causes them to spot. After the flower buds are set the plant should be kept cool, and when growth is complete moisture should be discontinued.

**RESTINO EUPHARIS AMARONICA** (*R. J.*).—It should be rested for six to eight weeks in a cooler, drier atmosphere, and light position, and when placed in heat and moisture the plants usually flower in from four to six weeks.

**ADIRISIA CRENULATA CULTURE** (*A Lady Amateur*).—Now is the proper time to report it unless it is in flower. It is best to report it before it starts into growth; or if reporting be delayed until the plant is in flower, report as soon as the flowering is past and the berries set. Remove only the loose soil, and return the plant to the same size of pot or one a little larger. Equal parts of turfy loam, sandy peat, and leaf soil, with a sixth of silver sand will grow it well. It ought now to be flowering in order to produce berries for next winter. Keep moist, but avoid making the soil sodden.

**GLAZING** (*J. P., York*).—The mode of glazing resembles in a great measure one that the late Mr. Knight of the Chelsea Nursery pointed out nearly thirty years ago. The glazing bars were prepared in the usual way, and instead of a bed of soft putty on which to place and fix the square, a thick coating of paint was put on, and whilst it was wet the glass was put in its place, and a rather thick coating of paint filled in the space above. The only difference between that plan and the one you recommend is, that no tacks were used. A plant house glazed in that way had been in use some time, but it evidently had not fully answered all that was required of it, otherwise it would have been copied elsewhere. The tacks, however, will certainly be useful, but there may be mistakes with them; for we saw a case, soon after the large squares of glass became fashionable, of a builder anxious to improve the appearance of the glazing of some pits he had put up, and where the glass did not lie level; he put in a few tacks to partly press down the glass so as to be more level and uniform, and apparently succeeded in doing so without injury to the glass, but the next day almost all the squares so treated were cracked across. We do not expect this will occur with the plan you recommended, but tight pressing must be avoided. We may say that we have had a good deal of experience with glazing, done by all the squares sliding-up from the bottom in a groove cut in the bar. This does very well for new work; very little putty is needed, but it is awkward to repair such lights, and fixing slips of wood on to take the place of putty does not answer well, as the wet gets in, and the frequent fastening to the bar by nails or screws tends to destroy it. We may mention to all who contemplate making experiments in glazing, that the glazing-bar ought to be painted, and in doing so let the paint extend at least an eighth of an inch over the glass on each side, so as to make a water-tight joint at the place. Even in the ordinary way of glazing this is necessary, as putty shrinks in the drying, or it may be the timber does so, and leaves an opening for the wet to get in. We hardly think any of the modes of glazing likely to be recommended will entirely dispense with paint, much as we wish they could do so.

**PARASITE ON GERANIUM** (*Bi'ou*).—The plant growing on the stem of your Bijou Geranium is *Orobancha elatior*, Tall Broom-Rape.

**CUCUMBER FRUIT DAMPING** (*E. C. P.*).—The cause is too low a temperature with too moist an atmosphere. Give them a brisker bottom heat and more top heat, admitting air carefully, but take care to avoid a chill. In sprinkling, evening lightly, and watering, use water of the same temperature as the house, or about 75°. See what Mr. Douglas has written on Cucumber treatment in a late number of the Journal.

**ERECTING A LEAN-TO PEACH HOUSE** (*Chas. Broome*).—Your wall will answer well for the erection of a Peach house, having trees against the wall and others in pots, or planted out in front. To accommodate two rows of trees in front, in addition to those on the back wall, you will need a wide house. The first row of trees should not be nearer the back wall than 6 feet, and between that and the next row allow 5 feet, with 2 feet 6 inches to the front wall, making the width 13 feet 6 inches. The front wall we should have 3 feet high, and 2 feet 6 inches of front lights, opening the entire length of the house, hinged to the top plate, and opened by lever and cranks. The roof to have top lights 2 feet 3 inches wide the entire length of the house, and hinged to the top wall plate, opening throughout the length by means of cranks and lever. We presume you do not propose to give more fire heat than a little in spring to keep out frost and secure a dry atmosphere at blossoming time, and in autumn to ripen the wood, for which two rows of 4-inch pipes along the front of the house will be sufficient. The trees should be 6 feet apart in quincunx order.

**EMIGRATING** (*Anxious*).—We never advise; it requires more information than we possess. We have known gardeners do well in Victoria, but you had better write to the Emigration Commissioners; they will give you full information.

**GAULTHERIA PROCUMBENS** (*Mrs. M.*).—Its only English name is Trailing Gaultheria, and it was named in honour of Dr. Gauthier, a Canadian physician and botanist. By the Canadians it is called "Partridge Berries" and "Mountain Tea," being used as a superior substitute for ordinary China tea. It was cultivated more than a century ago by Philip Miller. Any florist could supply you with a plant for 1s. or 1s. 6d. We know of no plant called *Inguerrina*. If you sent a flower we might identify it.

"TWO KINDS OF GLASS-CUTTERS were offered by us—the Patent Glass-cutter, at 5s. 6d., and the Adamantine-wheel Glass-cutter, at 1s. 6d., the sale of which has been since stopped by the patentees. When we sent the Patent Cutter out at 5s. 6d. we offered to reset the wheel, if the cutter was returned, for the sum of 6d., and we can still do so. The Adamantine-wheel Glass-cutter being only an imitation of its better rival, has no provision for re-sharpening, and therefore when the wheel is worn out is worthless. Is your correspondent (T. Norton, p. 182) confounding the two glass-cutters? If he was supplied with a 5s. 6d. cutter, and will return it to us, we shall have much pleasure in

resetting the wheel for him; but we are sorry if it was an Adamantine Cutter, for we are unable to repair it.—DICK RADCLIFFE & Co."

**BOIS IMMORTEL** (*Upnor Castle*).—It is *Erythrina glauca*, or Glaucous-leaved Coral Tree.

**GREEN FLY ON WALL ROSES** (*M. E. H.*).—Roses trained against a wall are frequently more liable to the attack of green fly, often from their roots being too dry; and sometimes owing to their position, they do not get the benefit of a free circulation of air and rain on their foliage. The free use of clear water with a garden engine, or, if that is not sufficient, water at 120° to 140° of temperature, with soft soap added at the rate of an ounce to two gallons, using clear water afterwards, will generally put an end to the depredations of the insect. But all Roses against walls should be supplied with good mulching, and with liquid manure whenever there is any tendency to green fly.

**BEST TWELVE TEA ROSES FOR CONSERVATORY** (*A. B.*).—*Souvenir d'un Ami*, *Madame Willermoz*, *Niphetos*, *Belle Lyonnaise*, *Boule d'Or*, *Adam*, *Louise de Savoie*, *Madame Dravy*, *Souvenir d'Elise*, *Perle de Lyon*, *Homère* or *Catherine Mermat*, *Vicomtesse de Cazes*.

**SIX CLIMBING ROSES FOR ROOF OF CONSERVATORY** (*Idem*).—*Maréchal Niel*, *Gloire de Dijon*, *Cécile Forestier*, *Climbing Devonensis*, *Lamarque*, *Jane Hardy* or *Madame Trifle*.

**GERANIUM LEAVES SPOTTED** (*T. C.*).—The leaves are crumpled and spotted owing to a moist and cold atmosphere, especially at night, with too little air. Give more air, leaving a little on at night, so as to prevent the deposition of moisture on the leaves. The sun falling powerfully on them whilst wet causes them to spot. Have them dry by giving air before the sun shines powerfully on them, admitting air and light freely. See that the soil is sweet and the drainage good. More heat with less moisture immediately on the plants will afford you a remedy.

**AZALEA LEAVES FALLING** (*T. W. L.*).—Continue the plants in the vinery, sprinkling them overhead twice daily, but not heavily, watering only to keep the soil moist. We fear, however, that the plants are dying or dead, probably from being supplied with water, which has caused the decay of the root-stem. Avoid watering upon the stem, and keep it raised in the centre of the pot. If the plants require retopping do so now, loosening the sides of the ball, and giving only a small shift, employing sandy peat. They should remain in the vinery until the buds are set, and then be removed to a cooler and more airy structure.

**PRIMULA SINENSIS SEED SOWING** (*Idem*).—Drain a pot well, place over the drainage an inch of the rougher parts of the compost, which may be equal parts turfy loam, sandy peat, leaf soil, and silver sand, filling the pots to within half an inch of the rim; make smooth, and scatter the seeds evenly, covering with an eighth of an inch of fine soil. Stand in a hotbed and keep moist, and near the glass after the plants appear. Pick-off in pans an inch apart when in the rough leaf, and pot-off singly when fit.

**NAMES OF PLANTS** (*Rev. J. Smith*).—*Omphalodes verna*, *Blue Venus's Navelwort*, a native of the south of Europe. (*G. M.*).—We cannot name your Azaleas, nor any other varieties of florists' flowers; they are too numerous and too nearly alike. (*R. D. D.*).—1, *Iberis sempervirens*; 2, *Genista Scorpion*; 3, *Linaria Cymbalaria*. (*Box*).—1, a *Carex*, perhaps *C. viparria*; 2, leaf only; 3, *Pulmonaria officinalis*. The Apple is the *Nycten Pippin*. (*G. M.*).—4, *Adiantum hispidulum*; 5, *Onychium japonicum*; 6, *Pellaea hastata*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### IMPROVING FARM POULTRY.

I READ with pleasure Mr. Nutman's reply in last week's Journal to my communication, but regret to see that little or no importance is attached to the subject by the numerous readers of this paper. That is the conclusion I have arrived at, and I think the right one too, from the fact that the matter has been allowed to drop. That it is an important one cannot, I think, be denied, and I am sorry one more able than myself has not taken it in hand. I will now take the points of objection to Brahma-Dorking fowls raised in Mr. Nutman's paper, and endeavour to show, as clearly and as quickly as possible, that they are the result of mere prejudice on the part of those from whom I least expected to find it. At first I did not like to see a Brahma cock about the place, but the result of the first sitting of eggs so altered my opinion that I will not, if I can possibly avoid it, be without one. I cannot understand how it is the Brahma eggs (I do not recommend Brahma pullets) referred to were so small; mine, as a rule, are good-sized ones, and what is deficient in that respect is made up by the extra richness, of which a great many people make a great feature. The eggs from the first-cross pullets are really very fine, are almost of the same colour as the Brahma's eggs, and are very plentiful, the birds usually laying seventeen to eighteen in as many days after getting broody.

The chickens from these two breeds do not show the slightest signs (I am, of course, speaking from my own experience) of the yellow tinge, which I well know some do object to, but are quite as white as any Dorking bird could be. The last-named class may do well in some instances—in fact, I am aware they do; but they require a place almost specially provided for them, or they will not thrive. Now, it is quite different with the half-breeds; they are just the reverse. The cross destroys that natural tenderness of the Dorking, and, what is still better, removes the coarseness of the Brahma, thereby giving at once such a fowl as we are in want of. Such a bird is peculiarly suited for the runs of the labouring class, as eggs and chickens are very plentiful, and the latter arrive at the killing size sooner, I think, than any others.

I am obliged to Mr. Nutman for drawing attention to the advertisement in which is shown the proposed age, but I had not

overlooked that part when I made the inquiry. It appears from that gentleman's letter that small fowls are preferred, and, if such is the case (I know it is at this season of the year), the landable object the Yarmouth Committee have in view will be entirely frustrated, inasmuch as the birds at the time of the Show will, without doubt, be full-grown, and will therefore be no guide as to how long a chicken is in arriving at the required size or weight. What should, I think, be done, is to limit the age to four or five months, as poultry, at the time when game is "in," is required much larger than it is at the present time. The question is almost inexhaustible, but I have already trespassed so much on your kindness that I will close, and, in doing so, express a hope that someone else will think fit to take up the thread.—HENRY J. GOODENOUGH.

**PRECOCIOUS PULLET.**—I have a pullet (a cross between a Crève-Cœur cock and a Brahma hen), hatched out on the 2nd of February, and on yesterday the 3rd of May I discovered beyond any doubt that she has laid three eggs. Can anybody beat this?—A. M., *Co. Meath, Ireland.*

### THE POULTRY-KEEPER.—No. 1.

We asked one of the best authorities on poultry-keeping and poultry-judging which he considered the best work upon these subjects, and he replied, "That by M. Jacque." We immediately made arrangements for publishing a translation, with permission to publish all the plates; we have obtained that permission with the original wood-engravings, and commence their publication to-day.

#### ANATOMY OF THE HEN.

We think it useless to give long descriptions of the interior anatomy of the hen, or the formation of the ovary, or the symptoms of all the ailments, &c. We have more need of knowing some points in the natural history of the fowls. Thus, for example, which varieties have certain muscles more or less developed; that the plumage in each kind should have certain colours and certain arrangements; that the formation of a certain organ is the indication of a particular quality, &c. We shall not review all the suppositions that have been made on the mysteries of fecundation or of incubation; it is enough for us to say that one kind lays little or much, that its eggs are large or small, that the time of incubation lasts about twenty-one days, and that such and such means are taken to facilitate and protect the hatching of the chickens, &c. We shall confine ourselves to detailing that which is useful in practice, and we shall not trouble ourselves as to what the hen was in olden times, nor what the ancients say about it.

However, some knowledge of the anatomy of a fowl is indispensable, and we begin with the skeleton of a hen; this skeleton covered with muscles, and these muscles covered with feathers. We shall add the particular anatomy of the head, of which each part often serves to characterise the variety, and we

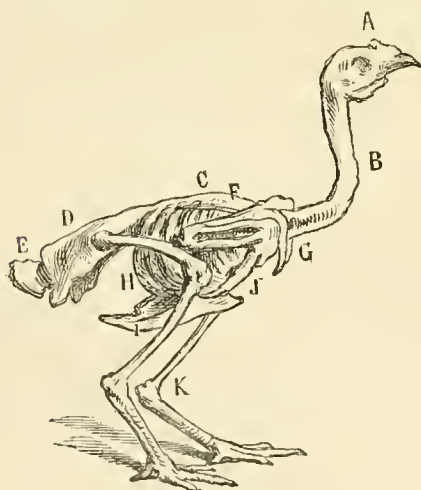


Fig. 1.

shall conclude our anatomical notes with describing and drawing the different feathers with which the hen is covered.

The engraving (fig. 1), represents the skeleton of an ordinary hen of an average size, and in the proportions to be generally met with.

The only important muscles are those which compose the

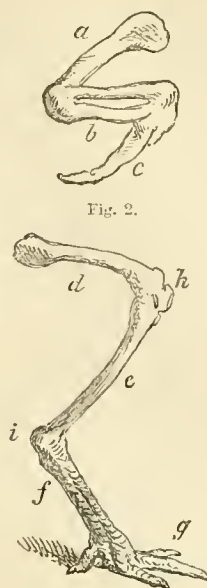


Fig. 3.

- A, The head, length  $2\frac{3}{4}$  inches.
- B, The neck, length  $5\frac{1}{2}$  inches.
- C, The back or spine.
- D, The hips or hip-bones. The back and hips comprise from the shoulder to the tail; length,  $5\frac{1}{10}$  inches.
- E, Rump or coccygis, length  $1\frac{1}{2}$  in.
- F, The shoulder-blade or scapula.
- G, Collar-bone or merrythought.
- H, The chest or thorax, composed of the sides and breastbone (bone of the throat). It contains the heart, liver, &c.
- I, The breastbone, length a little over  $3\frac{1}{4}$  inches.
- J, The wing bones composed of—  
a (fig. 2), the humerus or shoulder-bone of the wing, length  $3\frac{1}{2}$  inches; b, the radius and the cubitus, the fore-arm or pinion, length  $2\frac{3}{4}$  inches; c, the tip of the wing or that which takes the place of the hand and fingers, length  $2\frac{1}{2}$  inches.
- K, The leg, composed of d (fig. 3), the thigh-bone,  $3\frac{1}{2}$  inches; e, the shin-bone, length  $4\frac{1}{2}$  in.; f, the bone of the foot, the tarsus, length  $3\frac{1}{2}$  inches; g, the claws, that of the middle, length  $2\frac{1}{2}$  inches; the two to the right and left, length  $1\frac{1}{10}$  inch; that of the back, length  $\frac{1}{10}$  inches; h, the patella or knee; i, the os calcis or heel.

flesh, from which are formed the breast, the thigh, the leg, and the wing. All the others are slender and only furnish a little for table use. It is of little use to give the names of these muscles, but they may be seen in fig. 4. The places they occupy

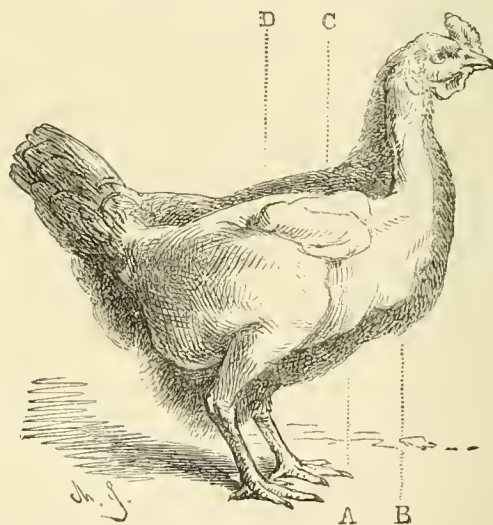


Fig. 4.

- A, The place of the breast or white meat; these muscles begin at the shoulder and extend to the abdomen, and fill each side of the breastbone.
- B, The crop.
- C, The wing.
- D, The thigh and the leg.

and the space that the feathers fill in completing the appearance of the live fowl.

People often confound the thigh, the leg, the foot, and toes of the hen; and so it is with nearly all animals. One expects to see her walk on the foot, though she walks like them on the toes. The horse walks on one toe. The ostrich, the sheep, the ox walk on two toes, the grallies on three, the hen, the lark on four, &c. The monkey walks on the foot, and is like man a plantigrade. Thus it is evident that the tarsus of the hen is the foot that she would rest on the ground if she walked like man; the end opposite the toes is the heel. Some varieties of fowls have five or six toes, but they do not all rest on the ground always.

**EARLY SWARM OF BEES.**—A cottager about a quarter of a mile from this town (Evesham) had a swarm of bees on April 20th.

I also heard of a swarm coming off at a village eight miles off on the 19th of the same month.—A. H. MARTIN.

### THE MAGPIE.

THE Magpie is one of the most beautiful of the Toys. It excites admiration wherever it is seen. The specimen I shall describe is a perfectly-marked bird, and the winner of first prizes. He is two years old, and has the blood as well as the colour, his young ones being like him. He is a golden yellow bird with white wings and breast. The white of the breast is marked in front by a line crossing the point of the breastbone, and extending up each side to the under part of the shoulder-joint; the lines then extend backwards to a line passing directly across the vent, the ends of which they intersect at the roots of the outer tail feathers of each side. All the parts (including the

If you will cross these with Tumblers, so as to get the colouring of the one and the tumbling of the other thoroughly settled in the one strain, you will have as handsome a flight as ever cleaved the air. A few seasons would be sufficient to accomplish the purpose, and it would be schooling yourself for higher experiments which you will wish to try, and for which you will need other knowledge than that found in books.—Dr. W. P. MOROAN.—(*American Fanciers' Journal*.)

### AYR POULTRY SHOW.

THIS was held, in connection with the general Agricultural Show, on the 28th and 29th of April. In entries it rather surpassed that of last year, being 293, and in 1873, 273. In quality the birds generally were inferior to those of last year. The best represented class was the Black-breasted Game *Bantams*, and



THE MAGPIE.

thighs) within these boundaries are of the purest white, and, where the colours are divided, the line is as sharp as though cut by a knife. Beak of a yellowish-white, pearl eye, and a hood broad and well shaped, feet smooth and red. He is rather smaller than the common Pigeon. A Blue hen has white wings, breast, and thighs, the dividing lines being the same as those of the yellow bird. Her beak is dark, eye pearl, and feet red, head plain; there is a dark bar across the tail.

In the same cage are Red and Black Magpies; the red is of a bronzed hue, and not the bright red as I should like. Black and white are the original colours of the Magpie, and I think the best, as the contrast is greater than in any of the others.

From the description you perceive some are capped and others are plain-headed; the capped are in fashion just now. The four colours mentioned are the standard ones—viz., a pure golden-yellow, not a pale yellow; a light blue, not a black blue; a bright red, not a bronzed red; and jet black, with a metallic lustre that must extend even to the tip of the tail. Blues and Yellows are the rarest.

The eyes must be pearl, feet red, and beak a colour corresponding with that of the bird.

This variety is of German origin, and bred from Tumbler strains. They have almost lost the tumbling trait, though I have seen them, when flown with Tumblers, revolving with the best of them.

the Silver *Hamburgs* the worst. One of our authorities says "Many of the classes were good considering that there were no English exhibitors; nor were any efforts made to obtain them." The Judge was Mr. A. Paterson, Wellington Street, Airdrie.

The following is a list of the awards, which some of our contemporaries have given incorrectly.

SPANISH.—*Black or White*.—1, W. McIntyre, Ochiltree. 2, A. Robertson, Kilmarnock. 3, W. Greenshield, Towholm, Kilmarnock. 4, R. Mitchell, Mauchline. *hc*, J. Hose, Fatas. 2, J. Hose; A. Walker, Kilmarnock.

DORKINGS.—*Coloured*.—1, J. Jardine, Kilmarnock. 2, A. Gibb, Ayr. 3, Z. H. Hays, Barrhead, Glasgow. 4, T. Smillie, Kilmarnock. *hc*, G. Girdwood, Ayr. *White*.—1, R. Farrow, Dalmellington. 2, G. Arnott, Corby Craigs, Dalmellington. 3, J. Bell, Dalmellington. 4, J. Pettigrew, Sillyhole, Dalmellington.

HAMBOURGERS.—*Golden-spangled*.—1, A. Beggs, High Blantyre, Glasgow. 2, W. Jardine, Millburn, Tarbolton. 3, J. Crawford, Beith. 4, R. Cunningham, Stewarton. *hc*, G. Cairness, Carnoustie. *Golden-pencilled*.—1, 2, and 3, D. Gilmour, Kilmarnock. 4, H. Bons, Dalmellington. *hc*, J. Coukie, Darvel.

HAMBOURGERS.—*Silver-spangled*.—1, J. M. Andrew, jun., Carnoustie. 2, A. Yeudall, Galston. 3, H. Shields, Crown Inn, Newmilns. 4, W. Husband, Kilmarnock. *hc*, J. Dunn, Galston; R. Cameron, Stewarton; R. Lees, Maybole. *Silver-pencilled*.—1, J. Borland, Faldie, Kilbarhan. 2 and 3, J. Stevenson, Chaplehall, Airdrie. 4, R. Cunningham.

COCHON-CHINAS.—1, R. Mitchell, Mauchline. 2, R. Fowlds, Riccarton. 3, T. Bruce, Busby, Glasgow. 4, J. Pollock, Busby, Glasgow. *hc*, A. Hutchison, Strathra; Miss Knott, Dumfries; J. Clark, Riccarton.

SCOTCH-GREYS.—1, J. Fulton, Beith. 2, A. Dunlop, Paisley. 3, H. Beaton, Hurlford. 4, T. Wallace, Loans. *hc*, J. Bell.

BAHAMA POOTRAS.—1, Capt. Willison, Kilmarnock. 2, A. Robertson, Kilmarnock. 3, R. Maxwell, Dumfries. 4, Mrs. Kilgour, Noltmyre, St. Quivox. *hc*, Capt. Willison.

GAME.—*Black and Brown Reds*.—1, J. Williamson, Johnstone. 2, Z. H. Hays, Barrhead, Glasgow. 3, Miss B. P. Frew, Snelcartown, Kirkcaldy. 4, Mrs.

J. Frazer, Dalmellington. *hc.* R. Muir, Cairnhill, Kilmarnock. *Duckwings and Piles*.—1, Z. H. Heya. 2, Mrs. A. Frew, Kilmarnock. 3, Miss R. C. Frew, Kirkcaldy. 4, J. S. Ferguson, Dalnair, Old Kilpatrick. *hc.* Rev. H. A. Fairlie, Kirkmichael.

**GAME BANTAMS**.—*Black-breasted and other Reds*.—1, D. Whyte, Ayr. 2, E. Dodd, Tarbolton. 3, A. Kennedy, Kilbrnie. 4, J. Dunlop, Nelson St., Newton. *hc.* J. Murdoch, Dalmellington. *Any other variety*.—1, J. Knox, Johnstone. 2, H. Benton, Dunfermline. 3, R. J. Hartley, Altrincham, Cheshire. 4, J. Mame, Johnstone. *hc.* Z. H. Heya.

**BANTAMS**.—*Not Game*.—1, Mrs. Frew, Townend, Kilmarnock. 2, A. Robertson, Kilmarnock. 3, D. McLaren, Kilmarnock. 4, J. Currie, Kilmarnock. *hc.* Master A. Frew.

**POLISH**.—1, J. Stevenson, Chaplehall, Airdrie. 2 and 3, A. Wyllie, Johnstone. **ANY OTHER VARIETY OR HALF BREED**.—1, A. McLellan, Barthead, Paisley. 2, M. Wilson, Kilmarnock. 3, Rev. J. Fairlie. *hc.* D. Bond, Ayr.

**DUCKS**.—*Down*.—1 and 2, J. Pollock, West Walton, Mearns, Neilston. 2 and *hc.* W. McDowall, Auchtridgure, Stranraer. 3, A. Robertson, Kilmarnock. *Aylesbury or any other breed*.—1, Z. H. Heya. 2, A. Robertson. 3, J. Reid, St. Quivox. 4, D. Hyslop, Elstoun, Ayr.

**TURKEYS**.—1, Rev. J. Fairlie. 2, Mrs. Dick, Doonholm, Ayr. 3, Miss R. H. Anderson, Dainshaw, Kilmarnock. 4, Miss M. Fullarton, Loans, Troon.

**GESE**.—1, W. Murdoch, Knockoon, Ayr. 2, D. M. Kiscock, Crosshill. 3, P. Agnew, Prestwich. *hc.* Mrs. Cooper, Fairford, Tarbolton; Miss Pollock, Carnaloch, Patna. 4, R. Martin, Houghwood, Beith.

EXTRA *hc.* R. Frew, Kirkcaldy (Nankin Bantams).

## CHARACTERISTICS OF A BLUE TURBIT.

BEFORE stating what I consider to be the standard of a Blue Turbit, allow me to ask why Turbits have not the same chances of winning as Carriers and Pouters? At any reasonable show there are classes for single cocks and hens in Carriers and Pouters; but it generally happens that Turbits, along with one or two other varieties, have to compete in the "Any other variety class," which, I think, does not afford them their due position, and prevents their having such a chance of winning as Carriers and Pouters and some other breeds which have their own classes. No one can say Turbits are not pretty birds, and I sincerely hope that no fancier will discard the Turbit on account of the above-named injustice.

The standard characteristics of a Blue Turbit I consider to be as follows: A short broad head; beak also short, in fact, the shorter the better. The crown or crest behind the head should taper to a point, if the Turbit is what is termed a point or peak-crested bird; but if a Shell-crested Turbit, the crown or shell should be spread out the whole width of the back of the head. The purle or tuft of feathers on the breast should open and turn back both ways, something like the frill of a shirt; the larger and more conspicuous the purle the greater the value of the bird. The thighs should be quite clean—i.e., not the slightest shade of blue or any other colour except white on them; the wings should be blue, with two narrow black bars across each, brown or rusty feathers are a serious defect; each wing should have ten white flight feathers. The breast, underparts, flight feathers, tail, and back should be white, and quite free from any coloured feather. Both cock and hen should be rather small, and the cock should have a nice gloss around the neck.—F. H.

## CROSS-STICKS AND GUIDE-COMBS.

MR. ALEXANDER wants fuller information as to the advantages of these, and wishes to know if I do not find them inconvenient when I want to cut out any of the comb, and whether they do not hinder the bees in fixing their combs, leading to more irregularity in their arrangement?

Cross-sticks and guide-combs are of great value to all who manage their bees as we do ours, and they cause no irregularity or hindrance in comb-building. The guide-combs are fixed in the centres of the hives to induce the bees to build their combs, and run from front to back, while the cross-sticks run from side to side. All the combs cross the sticks, and are securely fastened to them. The sticks steady and hold the combs as they are built. The combs being thus securely held, hives can be removed by cart and rail hundreds of miles without risk or injury. Without cross-sticks the combs would not bear the shake of a light cart many hundred yards on a good road in the summer. To attempt their removal in such a conveyance at such a time would probably be disastrous in the extreme. The combs would fall in masses, and the bees be smothered. Our bees are sent to the country in carts, brought home in August, and then sent in carts to Manchester, six miles distant, where they are booked by railway as passengers to the moors of Derbyshire. They are brought home in the same way without any breakdowns. Our hives are large, and one good day's work on the heather will pay for all the expense of carriage. The year before last the hives gathered in the aggregate more than 100 lbs. of honey daily for a fortnight. Besides, hives without cross-sticks cannot be safely lifted from their boards and examined. Their combs move about and fall together like the leaves of a book.

Cross-sticks are not only an advantage in keeping the combs firm and in the proper position, but they are useful in other respects: they form cross roads to any hives in hives, for the bees always leave passage-holes against the sticks, so that they cross from comb to comb. This is a great saving of time and a convenience to the bees.

The last point touched by Mr. Alexander is this:—"Are they

not in the way when combs are being cut out?" Yes, they are sometimes—that is to say, when it is desired to cut from 10 to 20 lbs. of honeycomb from a hive which is being kept for stock. We can often get 10 lbs. of pure honeycomb from a hive without touching a stick, and once I cut 18 lbs. from one. When all the bees are driven from a hive, with a view to take all the honey it contains, the sticks are no inconvenience, for they are speedily withdrawn by a pair of pincers, and the combs hitted out entire and placed on dishes.—A. PETTIGREW.

## BEE-KEEPER'S CALENDAR FOR MAY.

OWING to the weather in this locality being unfavourable for bees throughout March and till the 20th of April, we had begun to fear that 1874 would not be a year of early swarming or much honey. In the middle of March we had three days of severe frost, which made bee-keepers think of the brood in their hives being chilled and killed by it; but we have yet failed to find or smell any foul brood this season. About the 20th of April the weather became exceedingly fine; and as the fruit trees were just then bursting into blossom, the bees have done very well indeed during the last ten days. The farm-steading in this part of Cheshire are now embowered in huge white garlands of pear blossoms. These will be succeeded by the blossoms of apple trees. Both pear and apple flowers yield a great deal of honey of fine quality. As soon as the fine weather set in we removed from thirty to forty of our hives farther into the country, and doubtless the bees have been helping themselves to much rich treasure from the orchards in their neighbourhood; and while they have been doing this, they have been rendering great service to the farmers in setting the fruit abundantly. The value of bees in orchards, and in setting peaches and strawberries forced early, and plants difficult to seed, such as *Primula sinensis*, is not yet understood by many people. For such work they are invaluable. Now for a dialogue.

MR. B.—I should be obliged, Mr. P., if you would examine my hives once more to see what progress they have made. I will now smoke this one and turn it up. It is much heavier since I last looked into it. What is that shining in these cells?

MR. P.—That is the honey the bees have gathered to-day. Hold the hive so that one comb may be above another, and you will see it run out or drop out of one comb into another. You now see how it runs. It is honey in a crude state, put there till the bees have more time to re-swallow it, convert it into honey proper, and store it away. To-morrow morning please to turn up the hive, and you will find that this crude honey will have disappeared; and, turn the hive how you may, it will not drop from cell to cell as it does now.

MR. B.—This is exceedingly interesting, and indicates marvellous industry on the part of the bees. Do they re-swallow it all and carry it aloft during the night?

MR. P.—Yes, generally; but sometimes they gather so much during the day, that some remains till the bees have time and convenience to remove it. There may not be store cells enough for it, and the brood is now very abundant in strong hives, requiring much attention and feeding. You see that the brood extends to the extremities of the combs. I daresay this small old-fashioned hive has from 18,000 to 20,000 young bees (or brood) unhatched, and all these receive proper food and timely attention. Only think, Mr. B., how much work is necessary in mixing and kneading this food before it is given to the infants of the hive. One thing more let me call your attention to before we place the hive on its board. You see that much of the brood in the centre of the hive is sealed over. Every young bee has a lid placed over it when it is ten days old. In this hive about one thousand lids are required every day. You see the lids over the brood are convex in form, and those on the honey cells are concave. When brood dies and becomes foul the lids lose their rounded form, and become concave like the lids of honey cells.

MR. B.—I thank you much. This is really teaching by experiment or exhibition, which suits me exceedingly, for I like to have ocular demonstration of the truth of the lessons taught. I long to have my bees in larger and more beautiful hives, so that I could invite my friends to come and see what you have just shown to me. Most of the cells are occupied with brood and honey. When will this hive be ready for swarming?

MR. P.—The cells are not all filled yet, and many of them are not more than half filled. In this small hive there are probably about a thousand young bees hatched every day, and the bees will continue to gather honey and find room for it till the day of swarming. You will find it increasing in weight and strength daily, weather permitting. The more honey is gathered the faster the hive becomes ready for swarming, for bees do not sit closely on honeycombs. In a sense the storing of honey contracts the space occupied by the bees. They are driven downwards, or, in other words, they leave the sealed honeycombs comparatively uncovered. You will at once understand how speedily a hive ripens for swarming when both population and honey increase in numbers and bulk. Hives with comparatively

little honey in them have more brood in their combs, and more bees covering them. Such hives yield larger swarms than those better filled with honey, all other things being equal. If the weather continue fine this hive will be ready for swarming in ten or twelve days; and if the weather become unfavourable it will not be ready for three weeks, for bear in mind the bees and brood have to fall back on their stores in unfavourable weather. The consumption of honey would create space for the population; besides, the population sit more closely together in cold weather.

Mr. B.—All this is according to reason, and one can easily understand that much depends on the state of the weather. Last night about sunset, as I stood in front of this hive, I saw a few bees coming out of the door a little way, and then going back. What were they looking for?

Mr. P.—Nothing at all. The heat of the hive is becoming great and rather unpleasant, and causes the bees to seek a little fresh air on the balcony of their house, like ladies and gentlemen after dinner on a hot summer evening. If the wind were to rise and veer round to the east you would find the bees not sauntering on the balcony for a breath of fresh air, but arranging themselves in the doorway in a very close cluster to keep out the cold, or, more correctly, to prevent the heat of the hive from escaping. It is a beautiful sight, that of a hen gathering her chickens under her wings, and it is equally beautiful and interesting to see the bees of a hive full of brood closing their door with their own bodies. These things may seem out of place in a calendar, but I think that they should be known by all who wish to have a firm grip of the subject of bee-management.

Mr. B.—You are right; what you have said tends to strengthen my desire to possess a wide and comprehensive knowledge of the habits and management of bees. This best hive of mine may be ready for swarming in ten days. Would you advise me to adopt your artificial mode of swarming, or allow it to swarm of its own accord?

Mr. P.—All mine are swarmed artificially. We have no time to waste in watching and waiting for bees swarming. It is easily done, and answers admirably. Our first swarms sometimes fill large hives, and supers on them 30 lbs. each. Each early swarm, in a fair season, will rise in weight to 100 lbs. But we do not say it is better than natural swarming. All who try our system of artificial swarming succeed beyond their expectations, and continue year after year the artificial process. They prefer it, because it prevents the loss of swarms and the trouble of watching the bees. If you let yours swarm naturally you may see eggs set in royal cells about three or four days before the swarms leave. In artificial swarming the eggs are not generally set till after the swarms are removed. Second swarms come sooner after natural swarms than they do after artificial ones. If you try your hand at the artificial mode as it was described lately in the Journal, you may do it at any hour of the day. Place the swarm on the old stand and the mother have a short distance to the right or left. The bees at first have a tendency to go to the old spot and the old hive. The old hive, if equally near to the old stand as the swarm, will naturally attract the most bees; hence we frequently disfigure the front of the hive and doorway for twenty-four hours, so that the bees do not know it. But if the old hive be placed a few feet to one side of the old stand, and the swarm be placed on it, we find most of the bees remain as divided, and all goes on well. If the weather is not favourable for honey-gathering at the time of swarming it is a stroke of good policy to feed the swarm, and thus enable the bees to build combs in which to hatch brood. If the swarm were hungered for three or four days after it was hived it would be injured and hindered much. If the weather is favourable at the time of swarming no feeding will be needed.

Mr. B.—I want to know something of virgin swarms, virgin comb, and virgin honey.

Mr. P.—These will be noticed next month.

Mr. B.—Supposing I wanted supers of honeycomb instead of swarms this year from these two hives of mine, how would you advise me to proceed?

Mr. P.—It is a question whether you would get as much super honey on the non-swarming system of management as you would on the swarming system. A great deal depends on the season and time of swarming. Young swarms generally do better than old stocks. As this season is not an early one, we shall be in time to discuss this question next month. But let me say here that if I were not wanting swarms from your hives I would eke and enlarge them before I supered them, and thus have larger hives and larger populations to fill the supers when used. There can be no greater mismanagement of bees than the use of small hives. In such hives the powers of both queens and bees remain undeveloped. They act like the small iron boots that are placed on the feet of the female children of China, cramping and crippling them quite. If you, Mr. B., put your swarms into hives 16 or 18 inches wide, and be kind to them for a few days afterwards in the event of the weather being unfavourable, you may have the happiness of reaping a super of virgin honeycomb from each swarm before the season is over.

Mr. B.—Then you advise me to put supers on my swarm hives as soon as they are filled with combs?

Mr. P.—Yes. In supering, it is important to induce the bees to enter the supers and commence work in them at once. This cannot be too strongly insisted on, for it is as natural for bees to swarm as it is for birds to build their nests at the proper season, and it is disappointing and discouraging to beginners to get neither swarms nor supers when more experienced people get both. A bit of comb fastened in the crown of each super, and a wooden ladder up to it, will help the bees much; and before the super is put on the hive a piece of clean calico or paper should be placed between the super and the crown of the hive, with, of course, in the paper or calico a hole of the same size as the crown hole of the hive. This paper is simply to prevent the bees from building their combs on the crown of the hive, or fastening them to it. If the paper or calico be not used, supers have to be cut from the hive by a thin wire or knife, then raised up by wedges of wood to let the bees lick the honey from the cells broken by the wire.—A. PETTIGREW, Sale.

### STICKING HIVES—ARTIFICIAL SWARMS.

The old-fashioned practice of putting sticks across the skeps for comb-supports is now generally abandoned in the district where the writer resides. There is no need for them, and they only impede the labours of bees and disfigure the combs. Perhaps your readers may feel interested in knowing how the celebrated James Bonar, who published his later work in 1796, made artificial swarms. At page 138 he says, "To raise an artificial swarm the hive must be gently turned up, and the top of it placed in an eke, or in a hole made in the ground, on purpose to prevent it from being overturned. An empty hive of the same size must then be gently placed over it, mouth to mouth, and a sheet or large cloth wrapped round the joinings of the hives to prevent any of the bees from getting out. The undermost hive must then be rapped with both hands in the manner a drum is beat, rapping chiefly on those parts of the hive to which the edges of the combs are fixed, and avoiding the parts opposite to the sides of the combs lest they should be loosened, and, by falling together, crush the bees between them as well as the young in the cells. . . . The more bees there are in it (the hive) the sooner they will run into the new hive, for the concussion of the hive by the rapping alarms them as an earthquake alarms mankind, and they run to the upper hive in search of a more safe habitation. . . . The sheet may then be removed, and the edge of the upper hive next the right hand lifted up, when . . . the queen sometimes will be observed to go up along with the rest. When all the bees are thus removed it may be placed where the old one stood. . . . An empty hive should also be placed where the old hive stood to amuse those bees belonging to it that may return. . . .

"The operation may be easily performed at any hour of the day, but the safest time is when they are most busy at work. . . . I have taken off four artificial swarms in one forenoon," &c.

The lines—

"Hos ego versiculos feci, tulit alter honores,  
Sic vos non vobis,"

were said to have been written by—VIRGIL.

[I cordially thank the writer of the above for the extract from Bonar's book, indicating that he was the inventor of artificial swarming as practised by my father, and afterwards by others in his neighbourhood who followed his example. In the "Handy Book of Bees" these words were used: "Who was the inventor of this artificial mode of swarming I cannot tell. My father adopted it, if he did not invent, nearly seventy years ago." I once heard him allude to Bonar's book, so there can be no doubt that he derived the hint and practice from it. My father was a working man, and though he was, perhaps, the largest and most successful bee-keeper that Scotland ever produced, he had no pretensions or parade about his practice whatever. He kept bees for profit, and managed them with the least possible amount of labour. Bonar, by the publication of his invention, made it possible for a labouring man like my father to make hundreds of pounds by bee-keeping without the trouble of watching and wasting time day after day for bees swarming. I think it should now be called "Bonar's system."—A. PETTIGREW.]

FEATHER-EATING FOWLS.—Chickens kept in confinement very frequently contract the habit of plucking and eating the feathers of their mates. We were told by a gentleman fancier very recently, that this might be prevented by affixing a bundle of fodder in their place of confinement in such manner as to prevent the fowls from trampling upon and soiling it, while they were allowed free access to it to pick and eat such fragments as their appetites might covet.—(*American Pet-Stock Bulletin.*)

### OUR LETTER BOX.

EXTENSIVE POULTRY-KEEPING (*Agricola*).—If you are sure eggs will always make from 9d. to 1s. per dozen, your friend may make his poultry pay. Ho

must begin with a smaller number than 1200 hens. If he has the twelve acres now in hand, as he will want at least four houses on them, we advise him to begin at once the construction of the first; to build it lofty, roomy, but in the most inexpensive style. It may be made of wood, but should be free from draught to the height of 5 feet from the ground. As employment has much to do with restoration of health, this will be a boon to him. We therefore advise him to build the smallest of his houses at first; he will find many alterations necessary in those he builds afterwards. A man learns more about building by one experience in that line than by all the books that ever were written. In his house he must have plenty of ventilation, light by means of windows that can be open in summer, shut in winter; a good hard earthen floor; if possible, south, west, or south-western aspect; perches within 24 inches of the ground. He must have a granary, because to make it profitable he must buy everything wholesale. There will be a large consumption of food. Where eggs only are wanted a constant supply of pullets arriving at maturity month after month is more important than the breed of the birds. If the venture is determined upon he ought now to be looking out for his layers. If eggs sell for 9d. per dozen all the year round, they are worth much more in December and January. He ought, then, now to know where, when he has a house ready, he can find his April and May pullets. We know of no such establishment.

**ARISTOCRACY OF COCKS (E.).**—We constantly keep between forty and fifty cocks together in one run. Every now and then one runs a muck, but he always gets the worst of it. We take from the number, and add to it. We are, however, careful always to make any change at night, and to put the new comer on a perch or in a corner where there are several others. They agree, as a rule, very well; but you must make it impossible for a pullet to get in, or "Like another Helen, She'll fire another Troy."

No peace afterwards.

**BARTON-ON-HUMBER SHOW.**—Mr. F. Banks wishes to know if any prize-winners at this Show have received their prizes.

**BRAMA CHICKEN WEAK-LEGGED (W. Diamond).**—What is the flooring of the shed? We should think the chicken is suffering from cramp induced by living on a damp floor, as brick, stone, or wood. We can hardly give you a hope of recovery. The best remedy is to give stale bread toasted and steeped in strong ale. Let the bird have the same to drink, and be bedded with hay or soft straw.

**FOOD FOR POULTRY (A. W.).**—The fact of your birds laying so many eggs in the early months will account for the smaller number now. You cannot have the cake and eat it. Your fowls thrive in spite of your feeding, and we wonder they lay at all. Discontinue the fourths, and give them good barley-meal slaked with water morning and evening. You can give for a mid-day meal maize, barley, or table scraps. If you give your chickens nothing but groats we do not think they will live long enough to enjoy the maize. Give them some bread and milk, curd, cooked chopped meat, and hard egg chopped fine. They may live on the groats, but they cannot grow.

**CAYENNE FOR YOUNG CANARIES (Dot.).**—Begin to give it them when they are about seven or eight weeks old, before the young feathers begin to show, and it must be continued during the entire moult, or as long as the blood is in circulation in the feather.—W. A. BLACKSTON.

**COLOR OF BUFF CANARIES (Idem).**—They should be as high in colour in proportion as Yellow ones. The higher the colour the better; but there should be a covering of white over the body colour as if it were dusted with flour, or as though the bird were clothed in deep buff satin and covered with a veil. The yellow should be as deep a colour as possible, inclining to redness, and the cayenne diet will materially add to the tone.—W. A. B.

**CLOSENESS OF FEATHER (Idem).**—It affects colour much in the same way as closing a gilt-edged book shows the gold to greater effect; or, better still, notice the effect of the deep brownish red now in vogue on the edges of many books—Church hymn-books to wit. Close the book and you have all the colour. Then gradually open and spread the leaves with the thumb, and as the edges become separated, and not so close and compact, you at once lose colour. The closer and more compact the feathers, and the more intimately they overlap each other, the better will the colour which is at the extreme edge show itself.—W. A. B.

**SIZE OF HIVE'S CROWN-OPENINGS (A. Brennan).**—The size of crown-openings in our hives for supering is about 4 inches in diameter. We think one such in each hive is better than three narrow ones, which you term slits. If you use the adapting board with three slits in its centre, which you have just procured, it will have to be placed over a crown-hole as wide as the slits are long. The openings in your wooden-topped hives are not well adapted for supering. One hole 3 inches wide would be better. It will not matter much whether you remove the perforated zinc from the apertures or not.

**QUEEN WASP (P. Rainford).**—The insect you have sent is a queen wasp, which, if you had let alone, would have become the mother of a nest of wasps. Wasps are enemies to bees in this sense, that they will steal honey when they can enter hives, but strong swarms generally keep them out. They do more harm to grapes and other sweet fruit.

**HIVE ENTRANCE (Edwin Peck).**—There should be but one entrance to each hive. Whether, therefore, a nadir or a super is used, the door of ingress and egress remains the same.

**RE-USING MARYATT'S HIVES (H. T.).**—Maryatt's bee hives can be used for swarms again and again. In fact, we find there is scarcely any limit to the profitable use of well-made wooden bee hives. They will last a lifetime if only well painted now and then, and carefully cleansed from all impurities whenever a fresh lot of bees are put into them. Do not paint them, however, when you put a fresh swarm into them. The best time to do this is in October or November, when the bees are reduced in numbers and less active than in spring and summer. Hives should always be thoroughly cleaned and painted, if necessary, whenever they are out of use, as when the bees die out from whatever cause. Then they will be found ready to hand when most wanted. If there is any comb in your Maryatt's hive which "has been put away for some years" we should advise you to remove it all before putting the bees into it. It would be now so distasteful to the bees that they would immediately desert it. Your letter reached us too late to be answered in our last number.

**SUPERING (A Bee-keeper).**—Supering was fully unfolded in four letters on the subject which appeared in this Journal last autumn. Your chief difficulty appears to be in not being able to prevent breeding in the supers. You say "brood is the rule, not the exception," and have "tried the three-sixteenths slits as recommended by some writers, but not with much success." We prefer a good wide thoroughfare, 3 or 4 inches, between the hive and super. We advise you to keep large hives, for these not only afford the bees more

room for the eggs laid by the queens, but hold more workers, which fill supers more rapidly than a small number of workers can do. Another matter of great importance in the prevention of brood in supers is inducing the bees to commence in the crowns and build the combs downwards; this we do by fixing one, two, or three small pieces of white drone comb in the crowns. Bees are more inclined to put honey in drone comb than brood. Indeed, we have never known a drone bred in a super, and during the last thirty years we have had only three supers with brood in them, and two of these were filled to empty hives by artificial means. Our supers range in weight from 8 lbs. to 30 lbs. Most of them about 16 lbs. Supers should be kept warm, and light wholly excluded from glass ones. We cannot tell whether the arrangements for the proposed show of honey, &c., at the Crystal Palace are finally made or not, but think that by writing to the Secretary there, "A BEE-KEEPER" will obtain the information he seeks.

**DOO'S HAIR COMING OFF IN CIRCULAR PATCHES (F. M. N.).**—There are several varieties of the mange, and the symptoms you describe indicate it to be that which is best treated by lowering the diet. Give the dog mashed potatoes, oatmeal, and milk, but no animal flesh. Let the dog have regular exercise, and give him every morning two grains of blue pill, followed in four hours by a table-spoonful of castor oil. No local application is necessary, but the dog may be well washed occasionally with soft soap and water, taking care that he is well dried, as the mercury in the blue pill might make him likely to take cold.

## METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain.
	Barom-eter at 32° and Sea level.	Hygrom-eter.		Direction of Wind.	Temp. of Soil at 1 ft.	Shade Tem-perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1874.	Inches.	deg.	deg.	N.E.	deg.	deg.	deg.	deg.	In.		
April. and May.											
We. 29	30.034	59.4	44.0	N.E.	54.7	59.8	37.9	102.3	55.4	—	
Th. 30	30.033	61.3	45.7	N.W.	53.5	68.9	32.7	111.3	59.4	—	
Fri. 1	30.015	48.0	43.9	N.E.	54.4	61.8	40.4	112.4	59.0	—	
Sat. 2	30.106	48.0	42.6	N.	53.2	58.0	34.9	118.0	52.5	—	
Sun. 3	29.871	46.0	41.0	N.	53.0	53.4	39.3	99.7	96.0	0.090	
Mo. 4	29.787	45.8	41.6	N.E.	50.4	64.9	35.7	105.5	83.9	—	
Tu. 5	29.998	45.9	41.4	N.W.	50.5	54.8	39.4	100.3	98.1	—	
Means	30.005	48.0	42.9		52.8	59.7	37.2	106.8	94.8	0.090	

## REMARKS.

29th.—A very fine day, but rather cold, especially towards night.

30th.—Another fine warm pleasant day.

May 1st.—Dull in the morning, but fine before noon, and continuing so all day; splendid moonlight night.

2nd.—Fair all day, with the exception of a very slight shower between 3 and 4 P.M.; fine evening.

3rd.—Dull morning, very dark and stormlike in the distance at forty minutes past noon, and followed almost immediately by a very short hail shower; a slight shower in the afternoon, but fine after 4 P.M.

4th.—Rather cloudy and dull all day, with occasional gleams of bright sun.

5th.—Fine day, but very much cooler than it was a few days since; sprinkle of rain at midnight.

The unusually warm weather has ceased, and though it has returned to the low temperature of a fortnight back, it remains very dry.—G. J. SYMONS.

## COVENT GARDEN MARKET.—MAY 6.

THE cold winds of the last few days have somewhat checked our supplies, but not sufficiently to cause any material advance, good Broccoli being the only article in general request that has improved in price. French goods are coming in very good, and comprise Asparagus, Dwarf Kidney Beans, Artichokes, young Carrots, Turnips, and saladings. There have also been a few boxes of Cherries from the south.

## FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	½	sieve	0 0 3 0	Mulberries.....	½	lb.	0 0 0 0
Apricots.....	doz.	0	0 0 0	Nectarine.....	doz.	0	0 0 0
Cherries.....	½	box	4 0 6	Oranges.....	½	100	4 0 16 0
Chestnuts.....	bushel	10	0 20 0	Peaches.....	doz.	15	0 45 0
Currants.....	½	sieve	0 0 0	Pears, kitchen.....	doz.	2	0 6 0
Black.....	do.	0	0 0 0	Pears, dessert.....	doz.	3	0 10 0
Figs.....	doz.	0	0 0 0	Pine Apples.....	lb.	6	0 10 0
Filberts.....	lb.	1	0 1 6	Plums.....	½	sieve	0 0 0
Gooseberries.....	lb.	1	0 1 6	Raspberries.....	doz.	0	0 0 0
Cobs.....	lb.	0	1 0 6	Raspberries.....	lb.	0	0 0 0
Grapes, household.....	lb.	4	0 12 0	Strawberries.....	½	doz.	0 6 1 0
Lemons.....	½	100	4 0 12 0	Walnuts.....	bushel	10	0 16 0
Melons.....	each	4	0 8 0	ditto.....	½	100	2 0 2 0

## VEGETABLES.

		s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	doz.	3	0	0 0	Mushrooms.....	pottle	1	0 0 0
Asparagus.....	½ 100	3	0	5 0	Mustard & Cress.....	p. packet	0	2 0 0
French.....	3	0	10	0 0	Onions.....	bushel	4	0 7 0
Beans, Kidney.....	½ 100	2	0	0 0	pickling.....	quart	0	6 0 0
Beet, Red.....	doz	1	0	3 0	Parsley per doz. bunches	4	0	8 0
Broccoli.....	bundle	0	9	1 6	Parsnips.....	doz.	0	9 1 0
Cabbage.....	doz.	1	0	1 6	Peas.....	quart	4	0 8 0
Capsicums.....	½ 100	0	0	0 0	Potatoes.....	bushel	3	6 4 6
Carrots.....	bunch	0	8	0 0	Kidney.....	do.	0	0 0 0
Cauliflower.....	doz.	3	0	8 0	Round.....	do.	0	0 0 0
Celery.....	bundle	1	8	2 0	Radishes.....	bunches	1	0 1 6
Coleworts.....	doz. bunches	2	8	4 0	Rhubarb.....	bundle	0	9 1 0
Cucumbers.....	each	1	0	2 0	Salsafy.....	bundle	1	6 0 0
pickling.....	doz.	0	0	0 0	Savoy.....	doz.	0	0 0 0
Endive.....	doz.	2	0	0 0	Scorzoneria.....	bundle	1	0 0 0
Fennel.....	bunch	0	8	0 0	Sea-kale.....	basket	1	0 2 6
Garlic.....	lb.	0	6	0 0	Shallots.....	lb.	0	3 0 0
Herbs.....	bunch	0	8	0 0	Spinach.....	bushel	3	0 8 0
Horseradish.....	bundle	3	0	4 0	Tomatoes.....	doz.	3	0 6 0
Lettuce.....	bunch	0	3	0 0	Turnips.....	bunch	0	3 0 4
Lettuce.....	doz.	1	0	4 0	Vegetable Marrows.....		0	0 0 0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	MAY 14—20, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.					
			Day.	Night.	Mean.									Dava.	m. h.	m. h.	m. h.	m. h.
14	TH	ASCENSION DAY.	63.2	40.8	51.7	16	11	44	40	47	23	3	6	28	8	54	131	
15	F	Whitsunday Term.	64.8	40.7	52.7	15	10	4	42	7	47	3	35	7	8	53	135	
16	S		66.0	43.3	54.1	15	9	4	44	7	10	4	5	9	2	3	53	136
17	SUN	SUNDAY AFTER ASCENSION.	63.7	41.0	53.4	16	7	4	45	7	42	4	28	10	2	8	51	137
18	M	Anniversary Meeting of Royal Asiatic Society.	65.2	42.2	54.2	17	6	4	47	7	27	5	35	11	3	8	50	138
19	TU	Meeting of Zoological Society, 8.30 P.M.	67.0	42.7	54.9	14	4	4	48	7	27	6	morn.	4	3	47	139	
20	W	Royal Botanic Society's Show.	66.9	43.4	55.2	20	3	4	40	7	39	7	23	0	5	3	44	140

From observations taken near London during forty-three years, the average day temperature of the week is 65.7°; and its night temperature 41.9°. The greatest heat was 86°, on the 15th, 1833; and the lowest cold 25° on the 15th, 1850. The greatest fall of rain was 0.76 inch.

## VINE MILDEW.

**I**N a former paper I gave a very low estimate of the value of sulphur for one of the purposes for which it is constantly recommended, and it might from that be inferred that I place no value at all in a horticultural point of view on this well-known valuable substance. On the contrary, I would not on any account be without a stock of a quarter of a hundredweight at least in the growing season. If it is not required, and it very seldom is, so much the better; should it unfortunately be necessary to use it, it could be made to do its duty, and be out of sight again in at the most thirty-six hours. Left in sight it tells tales; it as much as says to every visitor, "You have been treating your Vines badly, giving them too much encouragement above ground and too little below—pulling them forward, as it were, by the head, and neglecting the roots. You have, perhaps, been keeping a damp atmosphere, fondly hoping thereby to kill red spider, and have unintentionally given a good reception to *Oidium Tuckeri*."

This, if not dealt with in a sharp, decisive manner, will make greater havoc than the red spider; but it is one of the easiest things in the world to get rid of if taken in hand quickly. One should always be on the watch for the slightest speck; if fruit is on the Vine, it generally appears on the fruit first in the shape of little, round, woolly-looking specks, at other times on the leaves in the same form, and rapidly spreads over the whole house; it will do this in two or three days in moist hot weather. I have examined a good many Vines on which mildew originated, and have in every case found them too dry at the roots. In some cases they had recently had tons of water applied to them, but it had failed to reach the most vital parts; the soil, when comparatively dry, had contracted, and left a space between itself and the wall, where most of the water would go down quickly to the drainage; or new soil had been added which was moister and looser than the old, and consequently the water would enter it very freely, and barely touch the older portion. But, most general of all, a sufficiency of water had never been applied. Even supposing the border to be in perfect order, sixty or a hundred gallons at a time would be nothing extraordinary to give a vigorous-growing Vine in a well-drained border wholly inside the house, and not too much shaded. This quantity will suffice for three weeks or a month if the soil is not too porous or too limited in bulk. The water should always be as warm as the soil, rather over the mark than under it—say never lower than 55°; 75° will do no harm. A little warmer than usual just as the flowers are expanding will give a little healthy excitement, and will help the shy-setting varieties.

Although I have never known mildew originate on Vines that had not suffered from an insufficient supply of water at the roots, I believe an insufficiency of anything there, and a moist growing atmosphere at the same time,

would tend to encourage it. The following, learned some years ago from a respected tutor, is the plan to get rid of it, supposing the house to be heated by hot-water pipes. Make the pipes as hot as possible towards the evening, giving at the same time as much top ventilation as the state of the weather will permit; if warm and dry, open all the ventilators, and get rid of most of the atmospheric moisture; then, as soon as the sun is off the house, damp the pipes a yard or two at a time with a rag or sponge, and dust on, through a piece of coarse tiffany or netting, as much sulphur as will adhere to the top of the pipe while it is still damp. Keep the ventilators open till all the pipes have been covered in this way, by which time the atmosphere of the house will be sufficiently dry, and it may be closely shut up. It will probably rise to 90° or 100°, and a blue mist will be seen to ascend from the pipes; this is sulphurous gas, and will soon put an end to the mildew. If the Grapes are half grown it will not harm them at all; if not so forward as this, it will probably make some of them a little rusty and darken the footstalks. The mildew, however, must be got rid of at any cost, and in nine cases out of ten you can get rid of it in this way without leaving any trace of the sulphur. The heat should be kept up for an hour or two, after which the fire may be allowed to slacken. The sulphur is of no use after it has been once thoroughly heated in this way, and can be washed off the next day.

If there is any doubt about the mildew, the treatment above described should be repeated with a fresh dose of sulphur. If, however, the mildew has not a very strong footing, and the job is well done, one dose will be quite sufficient. It will, perhaps, surprise some of your readers to be told that this treatment will not rid them of red spider; it will kill some of the young and tender insects, but the old hardy ones will go through it unscathed. What, then, can be expected from sulphur that is never heated sufficiently to produce sulphurous gas?

While writing about mildew I will remind your readers that mildew on Peach trees can be easily cured by syringing with soft-soap water at the rate of 2 ozs. to the gallon; that on Cauliflowers and the Cabbage tribe by dusting with soot or newly-slaked lime. And now, as you have among your contributors so many Rose-growers and Rose-lovers, I will thank some one to tell us the most effectual way to kill or prevent mildew on Roses.—WM. TAYLOR.

## GARDEN PARTIES.

THESE enjoyable *rèunions*, which have happily become an institution in the country, are the source of pleasure of the purest and sweetest character. The owner of a garden, surrounded by invited friends inhaling the fragrance and appreciating the beauties which Nature has provided at the summons of well-applied skill, ought at that moment to be happy—happy in creating happiness to others, and at the same time adding to his own store. And the gardener, too, feeling that his labour has not been in vain; seeing that, of however lowly birth he may be, it is in his power to minister to the enjoyment of the great and good—yes, and good—for true greatness and true

goodness are seldom separate or separable—ought to and does share in the pleasures of the "garden party." No doubt these gatherings are to him a source of extra study, anxiety, and labour, but these he gives cheerfully if he is situated as he ought to be in the confidence of his employer, having his appreciation and consideration, which have a value which cannot be fully expressed by the letters *£ s. d.* It is unquestionably the case that indispensable as the money part of the question may be, it is not with hundreds of men the sole attachment pertaining to their charge. The very love of their duties, the confidence they feel in the stability of a home however humble, the satisfaction they feel they give, are items of value which go to the credit side of the ledger. It must be so, or from whence the quiet content of men who by dint of hard study range infinitely above the artisans in educational standard, yet clearly below them in financial emoluments? Well, let us be thankful for the fact, and for every item of whatsoever kind that contributes to the comfort and contentment of a home. Persevering honest labour is sure to win a reward sooner or later in one way or another, and that reward is the great lever to further effort to meet the requirements of ordinary or extraordinary demands.

To the last category belong garden parties. They are extraordinary by the unusual interest which the many visitors show in the surroundings of the point of inspection. The tone of such gatherings is in its nature critical, and properly so, so long as it is that generous kindly criticism which gives pleasure all round—a criticism which is considerate and just, which embraces not merely the effect produced, but the means which produce it. It is in the generality of places hardly possible that everything can be at the finest—that every department is at the zenith of its prosperity on a given day: this is rather too much to expect in the majority of places, yet cleanliness and neatness will in most cases be secured, and it is wonderful what a power this has in enhancing the effect of fair average productions. This wanting, let the occupants of a garden be never so superior, they cannot but show to great disadvantage.

Cleanliness is the first thing to aim at and accomplish in making a garden yield a maximum of enjoyment. This should, if possible, pervade every part; but it can scarcely be attained except by extra effort, and when notice of a week or more has been given. This notice of any coming event which has more than usual demands on the gardener, ought not, in the interests of master as well as man, to be withheld when it can be conceded. It is a concession which most men value, but which by no means all are in the habit of experiencing. Being one of the favoured few in this matter, I can testify to the advantage a gardener feels it to be, to be made acquainted beforehand with any special circumstance affecting his duties. Such little notification is of value to the owner equally with the gardener, as those who have not yet tried will find out by experience if the feeling between master and man is what it should be. Thoughtfulness and consideration extended by one cannot fail to beget a corresponding feeling on the part of the other; and a man, if his heart and head are right, will never know when he has done enough for a good master; while the master will recognise the necessity occasionally of permitting special aid when needed for any extraordinary occasion when he sees a good and willing man unduly pressed, but this necessity is not so likely to arise when timely notice has been conceded.

Discursive as are these remarks, they are perhaps neither mistimed or irrelevant, and will not clash discordantly with the heading of this letter. Garden parties are commonly associated with late summer rather than early spring, and it is perhaps only in an old-fashioned garden filled with old-fashioned flowers that a gathering in April can be a success, except it be a new-fashioned spring garden, which when well managed has charms which nothing in summer can hardly surpass. That garden parties in April can give pleasure I have had proof, and this with nothing great or grand set out to tempt, but only the simplest array of the simplest flowers, which all may have who care to do so. In fact, the charm lies in the very simplicity of the feast. Well, but is a garden worthy of the name if it is uninviting in April? Ought not at this period everything to conspire to please? The brightness of the sun at this season cheers and gives life to the spirits, but later the heat is oppressive and enervating. The air is filled with the melodies of the songsters, which by-and-by will lapse into half-mournful cadences. The newly expanded foliage, so fresh and clean, robed in its virgin green, will anon look

heavy in comparison with its airy lightness now. The blossom of the fruit trees, exquisite in its delicacy, extorts admiration.

This is what nature contributes to a garden in April. Let man give his mite as well. Let him use Wallflowers freely—not sown at any time and grown anyhow, but treated as plants worthy of care; the bright golden yellow interspersed with the rich and varied browns and "bloods"—dwarf plants with huge trusses, the foliage close to the ground, and all the flowers single. Surround these with the lovely blue *Nemophila*, never half so good as now, mixed with snowy *Iberis*. Edge with the purple *Aubrietia*, *Golden Feather*, and *Arabis*, out of which let the *Pansy* peep and the *Daisy* lift its modest head. Throw in a clump here and there of the spring *Snowdrop*, and that fine and sweet spring flower *Daphne Cneorum*. Let the *Polyanthus* have a place, the lovely *Myosotis dissitiflora* and *Anemones* have room. Forget not either the pretty lowly and dense *Phlox frondosa*, the pick *Silene*, and golden *Alyssum saxatile*; and amongst them all be sure and remember the *Lothian* and the cottager's *Brompton Stocks*. The latter are not nearly so common as they were years ago, neither are the strains offered so uniformly good. It is one of the finest of all spring and early summer-blooming plants in-doors and out when it is fairly grown and the type good. The *Lothian* is more certain by the special care it has received in recent years. It is, perhaps, the most valuable stock grown, so certain, massive, and telling when seen at this season in conservatory or garden. A combination something, yea, very, like this has more than once in the April just passed away been a source of attraction and a fund of pleasure to the many citizens who did not deem a plain old-fashioned garden filled with these old-fashioned things beneath a visit; and a venture may be hazarded that not one in fifty failed to appreciate such as they found, and it is quite certain that if any solitary individual of preternaturally advanced ideas had so much as whispered "A lot of rubbish!" he would have been metaphorically voted out of the garden. That was once considered the correct term to use in reference to this simple class of spring flowers, but the phrase is fast becoming obsolete—just, in fact, as these old things are becoming new again.

Yes, garden parties in April or early summer ought to be more common, the elements ensuring their success being by nature half provided, the other half involving only a minimum amount of money, time, and skill, small in proportion to the vast amount of pleasure they create and produce. At this time are not the houses also gay with the gayest of plants, *Azaleas*, *Pelargoniums*, *Roses*, &c.? Are not the above occupants particularly inviting? the fresh upspringing *Ferns* and the unrolling of foliage plants centres of interest? Are not lawns clothed in spring verdure cool, and smooth, and cheerful? Add thereto simple spring flowers, and then with a fine day, the walks clean and nowhere a weed to be seen, a garden party in April is equally enjoyable with a similar gathering at any other period. Nay, will it not give more real pleasure to those in "city pent," being the first smiles of another summer coming—the first sweet breath of another year, filling the earth with gladness—the first taste of the relishing dish set out when the appetite is longing, from the famine of a flowerless winter? It is even so, as those will find who try to do their best to assist Nature in the proper setting of her resources at a time she displays her charms and puts forth her power. With more attention to spring, its beauties and simplicities, we add a touch to a beautiful world; the summer is lengthened and our capacities for enjoyment strengthened, and we go on our course in happiness and hope: at any rate, the latter is the patrimony of all.—J. WRIGHT.

#### RAISING AURICULAS FROM SEED.

THE inquiry of "J. A." on this point is but one evidence out of many that our old-fashioned florists' flowers and herbaceous plants are coming to the front once more, and I only wish I could give a more satisfactory reply to his question how he is to procure good Auriculas than I fear he will be likely to consider this to be. He complains that he cannot afford to try established varieties, and that he has failed to obtain good ones from seed; but there are many really good and prize-winning Auriculas that can be had cheaply—quite as cheaply as a bedding *Geranium* of any novelty or merit. Such sorts as *Popplewell's Conqueror*, *Waterhouse's Conqueror* of Europe, *Howard's Lord Nelson*, *Oliver's Lady Ann Wilbraham*, *Trail's General Neill*, *Fletcher's Mary Anne*, *Oliver's Lovely Anne*, *Netherwood's Othello*, *Parker's Metropolitan*, and others can be

had from 1s. 6d. to 2s. 6d. a-plant; and if any money is laid out on plants during the year, an amateur who is really fond of them would hardly begrudge the few shillings required to lay the foundation of a collection.

As to raising Auriculas from seed, there is nothing in which the celebrated direction of Mrs. Glasse (did she ever give it?) is more needful—first catch your hare—*i.e.*, first get good seed; for this is well nigh an impossibility, for these reasons: 1, The growers of Auriculas are few. In the county in which I live (Kent) I do not believe there is another grower, and I very rarely in the south of England hear of a collection. 2, Those who grow them either do not grow seed, or, if they do, they keep in their own hands the best hybridised seed for the purpose of raising seedlings. Most growers have the idea that seed ripening weakens the plant; and hence, as soon as the blooming is over it is picked off. I may mention as a proof of this difficulty that I have known £8 an ounce to be offered for it, and yet the owner of the collection was not able to save a scrap of it. And after all, what a very difficult thing it is to raise a good seedling Auricula! Take the case of Mr. George Lightbody, of Falkirk, who for upwards of thirty years was a raiser of seedlings, intelligent, careful, and with the perseverance of his nation strongly developed; and yet on looking at the last list he ever published I do not think that there are above three or four flowers at most that will be remembered a dozen years hence. I should therefore, taking all these things into consideration, advise "J. A." first of all to procure a few plants of such Auriculas as I have named, and then try to save his own seed. He can hybridise them, and so probably obtain a better strain of seed.

And now supposing the seed to be "by hook or crook" obtained, let us see how to proceed. It is best to sow it in pans, and the soil used should be light and rich—light sandy mould and well-rotted cow dung, with some sharp sand or some similar compost. The pan should be thoroughly well drained, and the compost when placed in it should rise in the middle, gradually sloping towards the side. The seed should be sown not too thickly, covered with finely sifted mould, and then be watered with a very fine rose. This should be done early in the year—February or March; and if there is the convenience of a hotbed or stove it would be well to give them the advantage of it, so as to produce rapid germination. Should moss accumulate, the surface should be lightly stirred; and as soon as the plants are up the pans should be placed either in the open air or in some cool place. The advantage of heat for causing the germination of the seed is obvious, but at the same time it must be remembered that the pans ought not to be exposed to heavy rains. About the month of July, when the plants will have grown sufficiently for the purpose, they should be transplanted into thumb pots, or several may be placed in a pan, in a compost similar to that in which the full-grown plants are kept, and should in all respects be treated as offsets or small plants would be. They will not bloom until the second or third year.

In what I have said I have had in my mind the finer, or show varieties as they are called. It is much easier to procure seed of Alpine Auriculas, and they are very handsome, but will never in the eye of a true florist compare with the more refined show varieties.—D., *Deal*.

## THE PACKING AND TRANSIT OF PLANTS, &c.

THE packing of plants for travel must be regarded as one of the most important departments connected with our now immense and rapidly-increasing commerce in tender plants; and, generally speaking, it is well understood and efficiently performed by those whom it concerns. Often have we admired the laborious care, and firmness and solidity of the manner in which professional packers perform this important part of the plant-merchant's business. This rule, however, as is not to be wondered at, is not without many exceptions. The transit of plants after they are packed, notwithstanding these days of swift travel, is a matter attended with much anxiety to the receiver, and no doubt also to the sender of packages of tender plants. It has become scarcely possible to divine when a package that has to pass over several railways by goods trains will come to hand, while to send heavy packages by passenger trains so augments their cost that such a course cannot be adopted. The parcel post and flying trains leave scarcely a desire to be realised in the safe and speedy transit of light packages. It is in the belief that these two sides of the question have become very obvious to many concerned, that

we have selected the subject as one worthy of remark and suggestion.

There are descriptions of plants which cannot be tampered with, in order to lessen either the bulk or the weight of the packages which contain them, and that must be sent by slow trains to avoid the enormous expense of the fast trains, even supposing it were practicable to have all these carried by such trains, which it is not; but there are other classes of plants which it is simply ridiculous to pack and send as they are yet far too generally packed and sent. We now refer more especially to the enormous quantities of comparatively hardy soft-wooded plants that are sent hither and thither on long journeys in the spring and early summer months. We will suppose a quantity of such plants—say *Pelargoniums*—bought in a nursery in small pots. Now, such plants are generally turned out of their pots and have something wrapped round their balls, and packed on their sides, layer above layer, in square hamper. When pitched into the railway truck they are an enormous weight, chiefly of comparatively useless soil; and by the time they reach their destination, we need not try to describe what the bottom layers of balls and plants are generally found—a mixture of smashed balls of earth, moss, and broken plants. The other method is to moss and tie down the balls in the pots, and often to fix a stake to each plant, and pack at enormous labour on their bottoms in large round flat hamper, or to pack on their sides, as in the case of those turned out of their pots. Those packed on their bottoms travel, as a rule, well, but at what a cost for a given amount of plants! The carpenters' shavings, or stable litter, or straw, hamper, hazel rods, and mats, far outweigh the goods. When placed on their sides in pots, the broken pots are too often added to the mixture of soil, moss, and broken plants.

Now we believe this order of affairs is not solely chargeable to nurserymen, but to the erroneous ideas that the receivers of such "orders" hold as to the safety of the plants. We have to suggest to both parties that if those who order such goods as we are now speaking of—let us take for instance a consignment of *Pelargoniums*, despatched any time in April—would "order" that all the soil should be shaken from the plants, carefully preserving the roots: pack them top to top and root to root, not mingling roots with tops, in a small light hamper, using nothing but pliable paper round the inside of the hamper (no damp moss nor heavy heating rubbish of that sort), and despatching such by passenger train, they would in most cases reach their destination as soon as the nurseryman's letter of advice. In this case there would scarcely be a bruised leaf, and the roots not so much injured as when the balls get broken on the journey; and, after being potted in fresh soil, they would look better than before they were shaken out. The passenger carriage would not be more than that by goods train, and the time on the journey in the one case a fraction of the time in the other. This is no mere fancy picture; we have tried it over and over again, and it is an advantage to both, for the packer does his work far quicker in the one case, and the pots are saved, for which an allowance is made. The absurd practice in the mode we recommend in the packing of shaken-out plants with a layer of damp moss and shavings, which not only necessitates a larger hamper and a heavier package, but it is at the same time a positive evil. Whatever is placed in layers around such goods should be light and perfectly dry, and we think paper the best.

Many such plants are not despatched to the country till they are required for planting; and in the case of *Geraniums* and many other similar plants we would say, Shake the soil from them, for no one would ever think of planting with ball entire such plants matted in small pots. A partial "shake-out" would of course be best; but of two evils the total shake-out is far less than that of planting with a ball like a bullet, and we have invariably noticed that plants shaken-out grew the most satisfactorily, to say nothing of the lightness of package, and swiftness and certainty of transit.

One of the greatest evils connected with packing for a five or six days' transit is that of packing with damp material; it heats by the way, and even when it does not heat, plants out of perfectly dry, always look and do better at once than those turned out of damp material.

We are very much surprised that paper-shavings—so clean, so light, so springy and elastic, and consequently so warm—have not been more used by plantmen for packing, particularly moderate packages of tender plants. We once sent a package of plants to France, packed with paper-shavings exclusively in a large but light box, and the receiver was quite

taken with the nice, clean, undamaged state of the plants and the lightness of the package, and expressed his surprise to us that such material had never been used by nurserymen. No doubt if a demand were to spring up for such, it could be supplied in various qualities even much cheaper than it is now.

The enormous traffic there is in Vines in pots, and the outrageously unnecessary-sized pots in which most purchasers insist on receiving them, is one of the greatest mistakes in the whole round of plant-culture, not looking at the question from the carriage standpoint at all. This is especially applicable to Vines for planting, which are generally sought from 6 to 7 feet long in large pots. The whole thing is a mistake, both for the seller and receiver. Given two Vines, one in an 8 or 10-inch pot, 6 feet long (and setting aside everything but the quality of the Vine), and another in a 6-inch pot, a yard or 4 feet high at the most, stiff, and standing erect without a stake, with its best buds about 2½ feet from the bottom, and filled with a mass of fibry roots—we would choose the latter, not only on account of the small package that is required for transit, but because it is the best-ripened and most twiggy-rooted Vine, having the best buds at the part from which the young growths are allowed to spring for furnishing the Vine. A long Vine has its best buds near its top, and the cultivator, after planting, rubs these off and brings away growths from weaker buds at the front light of his vinery. How easy it is to pack 6-inch pot Vines. Turn them out of their pots and wrap a piece of coarse canvas, or even strong paper, round the ball, or rather mass of roots, and the weight of pots is saved, and less space required to pack in, and when received pop them into 6-inch pots. The long Vine in a large pot, when the plant is required to plant out, is a great mistake; what is wanted is a concentrated well-ripened bud and twiggy roots.—(*The Gardener.*)

## CRYSTAL PALACE SHOW.

MAY 9TH.

THIS was held fully a week sooner than usual; and though many of the specimens had not arrived at their full beauty, and there was a falling off both in quantity and quality in many of the classes, the Exhibition well merited the numerous attendance of visitors which it secured, notwithstanding the coldness of the day.

Among the stove and greenhouse plants a great deficiency was created by the absence of Mr. Baines' grand collections, which have recently been dispersed; but Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, who was first for twelve, exhibited large, finely-bloomed specimens of *Hedera Hookeri* and *tulipiferum*, *Aphelexis macrantha purpurea* and *rosea*, *Statice profusa*, very fine; *Azaleas*, and *Anthurium Scherzerianum* with a score of finely-coloured spathes. The remaining prizetakers in this class were Mr. Kemp, gardener to the Duke of Northumberland, Albury Park; Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood; and Mr. G. Wheeler, gardener to Sir P. Goldsmid, Bart., Regent's Park. In the nurserymen's class Messrs. Jackson & Sons, Kingston, took the lead with excellent specimens of *Heaths*, *Azaleas*, *Aphelexis macrantha purpurea*, and *Dracophyllum gracile*. Mr. Williams, of Holloway, followed with a magnificent specimen of *Anthurium Scherzerianum* with some thirty flowers, *Acrophylloides venosum*, very fine; and other excellent specimens. Mr. Morse, Epsom, was third. In the amateurs' class for nine, Mr. Peed took the lead with a large bush of *Tetratheca ericifolia*, a very good specimen of *Epacris miniata splendens*, and other plants shown by him in a similar collection last year. Mr. Donald, gardener to J. G. Barclay, Esq., Leyton; Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill; and Mr. D. Bain, gardener to J. Scott, Esq., Bickley Park, secured the other awards. In groups arranged for effect the prizes went to Messrs. Foreman, Fewell, and Peed.

In groups of six fine-foliaged plants we noticed fine specimens of *Alocasia metallica*, *Maranta Veitchii*, *Crotons*, *Lantana borbonica*, and some other Palms. Mr. Fewell, gardener to Mrs. Sargood, Broad Green Lodge, who was first, had a noble example of *Alocasia Lowii*. Messrs. Bain and Donald secured the remaining prizes.

Heaths were shown in collections of eight and of six. Mr. Ward, gardener to F. G. Wilkins, Esq., had large, finely-bloomed plants of *Ventricosa magnifica* and *Eximia superba* in the latter class, taking the first prize; and other good specimens were shown by Messrs. Peed, Morse, Kemp, and J. Wheeler.

*Azaleas*, with a few exceptions, were not up to the mark; the large plants were deficient in bloom, and many of the smaller ones had a ragged appearance. The chief prizetakers among nurserymen were Messrs. Williams, Turner, and Lane; among amateurs G. Wheeler, J. Wheeler, and G. Roach. In the groups of twenty, grown in 12-inch pots, Mr. Turner, of Slough, and Messrs. Jackson, of Kingston, furnished excellent plants con-

sisting of varieties different from those represented in the ordinary run of exhibition specimens.

Of Orchids some very good examples were staged. Mr. Ward, who was first in the amateurs' class for fifteen, had excellent specimens of *Odontoglossum Phalanopsis*, *Pescatorei*, *Alexandria*, *Lycaste Skinneri*, &c. Mr. G. Wheeler was second. For six the prizetakers were Mr. Peed and Mr. J. Wheeler; and in the nurserymen's class Mr. Williams, Mr. Morse, and Messrs. Jackson. Mr. Williams had *Cypripedium caudatum* with eight blooms, *C. villosum*, *Dendrobium infundibulum*, *Foxbrush* *Aërides*, and two fine plants of *Vanda tricolor* vars. *superba* and *melesgris*, the latter with six spikes.

Pelargoniums of the Show kinds were best represented in the nine from Mr. Ward, which were first in the amateurs' class, and which comprised splendid plants of *Rob Roy* and *Rose Celestial*. Mr. James was second; while in the nurserymen's division the awards fell to Messrs. Dobson, of Isleworth, and Mr. Turner.

The most striking and successful part of the whole Exhibition was, however, the display of Roses in pots. Those from Messrs. Paul, of Cheshunt, and Mr. Turner, of Slough, were probably the most superb specimens ever exhibited, and so evenly balanced were the merits of the two collections of ten, that they were awarded equal first prizes. Messrs. Paul & Son had *Madame de St. Joseph*, *Mlle. Thérèse Levet*, *John Hopper*, *Céline Forestier*, *Victor Verdier*, *Horace Vernet*, *Anna Alexieff*, *Princess Mary of Cambridge*, *Charles Lawson*, and *Dr. Andry*. Mr. Turner sent *Victor Verdier*, *Madame de St. Joseph*, *Souvenir de Malmaison*, *Juno*, *Charles Lawson*, *Paul Perras*, *Duke of Edinburgh*, *Anna Alexieff*, *Beauty of Waltham*, and *Souvenir d'un Ami*. Mr. Turner also contributed the only group of fifteen, and Messrs. Paul of twelve, but in both cases these were admirably grown and bloomed, well deserving the first prizes awarded. Mr. Moorman, gardener to the Misses Christy, Coombe Bank, Kingston, was first in the amateurs' class.

Among miscellaneous subjects were collections of Clematis from Messrs. Jackman, of Woking (to whom a first prize was also given in the class provided for that flower); from Mr. Ley, nurseryman, Croydon; Messrs. Cutbush, Highgate; Messrs. Downie, Laird, & Laing; Messrs. Rollisson; and Mr. Williams, Holloway. Groups of fine-foliaged and flowering plants, and fine stands of cut Roses from Mr. William Paul, who also contributed a very ornamental collection of Ives. Messrs. Downie & Co. and Mr. Hooper, of Bath, exhibited several stands of show and fancy Pansies, and the latter Tulips and Ranunculuses as well; Mr. Ware, of Tottenham, bedding and other Pansies; and Messrs. Dobson, Calceolaries. Mr. Croucher, gardener to J. Peacock, Esq., Sudbury House, Hammersmith, exhibited three immense specimens of *Echinocactus visnaga*, which excited much attention on the part of the visitors. Among new plants, *Agave Taylorii*, *Adiantum gracillimum*, *Ceterach aureum*, and *Ficus Parcelii* from Mr. Williams, and *Betula alba purpurea* from Mr. W. Paul, had certificates.

## FLORENCE INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

THE opening of the new markets at Florence has furnished the occasion for holding a great International Horticultural Exhibition and Botanical Congress, such as has already taken place at Brussels, Amsterdam, London, St. Petersburg, Paris, and Vienna. Thither are the savants, the connoisseurs, and amateurs of botany and horticulture tending, and during the time from the 12th to the 20th of this month the ancient capital of Tuscany will hold high holiday. We cannot give any report of these proceedings this week, as at the time of our going to press there is not time to have received any communication which could convey an account of the proceedings, but it is our intention next week to furnish our readers with all the particulars of this effort of Italy to assert a claim to recognition among the horticultural communities of the world.

There are few places that could have been better chosen than Florence for such a gathering, with all its historical and high art associations; and even if, as it has been said, there is nothing worth calling gardening in southern Europe, where nature and not art mainly supplies man's wants, there will be much to please and to satisfy the visitor in other branches of knowledge.

So far we have been mainly occupied with our journey, and a few notes hastily thrown together as to our observations on the route may not be uninteresting. Spring frosts, those *bêtes noires* of British gardeners, have this year extended to France, and on the morning of the 4th telegrams reached the Minister of the Interior in Paris that one of these scourges had passed over the whole surface of the country, causing serious damage to the Vine districts. This we found fully confirmed in travelling down through the Côte d'Or and Burgundy. There the Vines are completely blackened, and young leaves of the

Walnuts are shrivelled up as if they had been scorched. About Macon the damage has been very great; but it is consolatory to know that some of the finest of the Medoc vineyards, such as Margaux, Branne Mouton, Lafille, and Larose have escaped. Near Dijon we observed that one proprietor, more thoughtful than his neighbours, had taken the precaution to shelter as much as about a quarter of an acre by laying boards on a rough framework over the Vines.

Vegetation to the south of Paris as far as Macon has not advanced much, if any, farther than it had done in England at the time of our departure; and it was curious to observe the difference which altitude made in the foliage of the interminable Poplars which everywhere force themselves on the attention. Between Paris and the Côte d'Or the leaves are almost fully developed; but when the higher ground is reached, and where we found the altitude to be 650 feet above Paris, the buds had hardly burst. But beyond Macon a gradual advance was observable, and on reaching Bourg and Amberien all traces of the frost had gone, and the Vines and Walnuts were rejoicing in their bright new clothing.

At this early season when vegetation is fresh we had an opportunity of observing what we never did before during many visits to the Continent, and that is that among the interminable Poplars there are two species which are easily distinguished at this early period. These are *Populus nigra* and *Populus canadensis*, the latter being by far the more prevalent. The distinction is easily seen by the dark green foliage of the former, and the pale yellow-green with russet tinge of the latter. Sometimes where there is a group of *canadensis* with here and there *nigra* dotted among them the effect is quite striking; and this hint may benefit those of our readers who are interested in planting trees for colour effects. The same contrast is met with between the Lombardy Poplar, which is a variety of *nigra*, and *canadensis*.

Another object of attraction from Dijon to Bourg, the capital of the old province of Bresse, was the heaps of flat square crates that were piled up empty at various stations, and these we discovered to be the "returned empties" which had conveyed the noted fowls of Bresse to all parts of France. These fowls take the place of the Sussex and Dorkings with us, and are esteemed as the finest fowls on the Continent. True to its tradition, we found throughout Bresse large quantities of these fowls running in the pastures, and reminding us of the great chicken-fattening districts of Sussex.

As we near the Alps, vegetation, instead of being retarded as we erroneously supposed, is far in advance of the parts through which we had passed. From Ambergien, where the grandeur of the Alpine scenery begins, there is great progress made, and the Walnuts, Mulberries, and Limes are almost in full leaf, while at Chambéry the fine avenue of Planes leading to the town affords an ample shade from the sun, which has already become so powerful as to remind us that we have left the cold north behind us.

## ROYAL HORTICULTURAL SOCIETY.

MAY 13TH.

THE great feature on this occasion was the display of Roses in pots, which was of the highest excellence. It was no mere repetition of that at the Palace on the previous Saturday, except in quality, which was equally good. Orchids, Azaleas, and miscellaneous groups lent their aid, the whole forming an important and effective exhibition, occupying nearly the whole of the two conservatory corridors, while in the conservatory itself was Mr. Noble's show of Clematis.

Of pot Roses the examples shown by Messrs. Paul and Mr. Turner in Class 1 were superb. Several of the plants ranged from 5 to 6 feet in diameter at the base, and he would be a bold man that would hazard a guess at the number of blooms which they bore, and all so exquisitely fresh and beautiful that one would suppose that the art of the cultivator could go no further. The competition between the two redoubtable champions we have named was extremely close, but ended in the Judges deciding in favour of Messrs. Paul, of Cheshunt, as the winners of the first prize; but the merit of both twelves was so great that we should have been pleased to have seen a first prize given to each. Messrs. Paul had *Souvenir d'un Ami*, *Juno*, delicately beautiful, Charles Lawson, a mass of flowers, Madame Victor Verdier, and Céline Forestier claiming especial attention, the last in particular being a variety which it is difficult to show in such fine form. The remainder were John Hopper, President, Vicomte Vigier, Madame Willermoz, Victor Verdier, Camille Bernardin, and Elie Morel. Mr. Turner, of Slough, had grand plants of *Juno*, Charles Lawson, Paul Perras, La France, with others almost equally fine of Paul Verdier, *Souvenir d'un Ami*,

Victor Verdier, Beauty of Waltham, Anna Alexieff, *Souvenir de Malmaison*, and Madame Thérèse Levet.

In the amateurs' class for six Mr. Ellis, gardener to J. Galsworthy, Esq., and Mr. Moorman, gardener to the Misses Christie, Coombe Bank, Kingston, exhibited plants more than usually good for amateurs. Those from Mr. Ellis were the larger specimens, while Mr. Moorman's La France, Paul Verdier, and Anna Alexieff were exceedingly well bloomed, though smaller plants.

The next class was for twenty distinct kinds in 8-inch pots. Here Mr. Turner took the lead with, among others, beautifully grown and flowered plants of Alba Rosea, Lyonnais, Charles Lawson, Edward Morren, La France, and Marie Van Houtte. Messrs. Paul came in second with an excellent group in which François Michelon, Monsieur Noman, Mlle. Eugénie Verdier, Cheshunt Hybrid, and Céline Forestier were conspicuous; while Messrs. Veitch were third with an even and very well bloomed collection, in which the white Hybrid Perpetual Madame Lacharme was perfection, although Exposition de Brie, Dr. Andry, and La France carried blooms which could hardly be excelled.

For cut blooms the prizes for twenty-four went to Messrs. Paul and Mr. Turner, in the order in which they are named; for twelve to Mr. Moorman and Mr. Tranter, Upper Assendon, Henley.

The next class in the schedule was for six Clematis. Here there was only one collection, that from Messrs. Jackman, of Woking, who well merited the first prize that was awarded. Countess of Lovelace, which received a first-class certificate at the last meeting, was the finest; but of the single, Veata, Fair Rosamond, The Queen, and Lady Stratford de Redclyffe were specimens as well grown as they were full of bloom.

Azaleas were neither of large size nor remarkable on the whole for excellence. Mr. Turner, of Slough, had a very good nine in 12-inch pots, taking the first position for that number; Messrs. Ivory & Son came second, also with well-grown plants, not, however, fully out; Messrs. Jackson, of Kingston, were third. In the amateurs' class for six, Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., was the only exhibitor, and secured a first prize. In the open class for the same number, Mr. Turner was first with very good dwarf standards of Duc de Nassau, Hooibrenkii, and others.

For Calceolarias Messrs. Dobson & Son, and Messrs. James, of Isleworth, were respectively first and second with richly-coloured, large-flowered varieties obtained from their excellent strains. A third prize was awarded to Mr. Rapley, gardener to R. Hudson, Esq., Clapham Common.

For twelve Hardy Perennials in 12-inch pots Mr. R. Parker, Exotic Nursery, Tooting, took the highest position with a fine pot of *Iris germanica spectabilis*, *Iberis corifolia*, *Saxifraga granulata flore-pleno*, *Dielytra spectabilis*, and a fine golden-yellow bush of *Alyssum orientale*. Mr. R. Dean, Ranelagh Road, Ealing, was second with nice healthy *Daisies*, *Violas*, &c.

Of twelve bunches of cut flowers of hardy herbaceous plants Mr. Parker was the only exhibitor, but he had some fine flowers, and a first prize was awarded to them.

The class for twelve plants suitable for the dinner-table brought out collections of valuable and suitable plants. Mr. J. W. Wimssett, nurseryman, Chelsea, received the first prize. The most effective plants in his collection were *Aralia Veitchii*—its finely-divided leaves are very graceful; *Cocos Weddelliana*, one of the best Palms for this purpose; and *Pandanus Veitchii*. Mr. W. Bull, King's Road, Chelsea, was second; his plants were also very fine. *Aralia leptophylla*, *Cocos Weddelliana*, and *Dæmonorops plumosus* were the best. Mr. J. Hudson, Champion Hill, was third.

Auriculas were poorly shown; it is now too late for them. Mr. C. Turner was first both for Show and Alpine varieties. The Rev. H. H. Donbrain was second in the former class, and amongst others he had an excellent truss of Fletcher's Ne Plus Ultra. Mr. R. Dean was second in Alpines, and Mr. James, of Isleworth, third.

Among miscellaneous subjects, for which several silver and bronze medals were awarded, were mixed groups of plants from Mr. Williams, Holloway; Messrs. Rollisson, Tooting; Messrs. Veitch; Mr. Aldous, Gloucester Road, South Kensington; Mr. G. Wheeler; and Messrs. Standish. In Messrs. Veitch's group were several fine Orchids, and of these plants alone Mr. Dennig, gardener to Lord Loudesborough, sent remarkably fine examples of *Epidendrum ibaguense* with thirteen spikes; *Schomburgkia lilacina*, *Odontoglossums*, *Leptotes bicolor*, *Chysis Limminghii*, *Cattleya Mossiae*, and *Lælia majalis*. Messrs. Dobson sent a collection of Calceolarias; Messrs. F. & A. Smith one of Azaleas, and Mr. Condy, gardener to T. Blackwell, Esq., Harrow Weald, a fine plant of *Medinilla magnifica*.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. From Mr. Miller, The Gardens, Clumber, came some fair examples of a Cucumber called Clumber Prolific, which was passed as of no particular merit. Mr. Hepper, gardener, The Elms, Acton, sent a box of Hepper's Goliath Tomato, to which a cultural commendation was awarded. The same exhibitor sent

a fine box of Mushrooms, which also received a cultural commendation. From Mr. Hooley came specimens of Ribbon-leaf Broccoli, which were passed by the Committee. Mr. Allan, gardener, Gunton Park, Norwich, exhibited a bundle of Asparagus, which was also passed. Mr. Dean, Bedford Nursery, sent a sample of Curled Parsley, which was of no high merit.

Mr. Miller, Clumber, exhibited a box of British Queen Strawberry; and Messrs. Monro & Wilkinson, Potter's Bar, sent a fine box of Sir C. Napier Strawberry, to which a cultural commendation was awarded. A basket of very fine fruit of Sir J. Paxton and President Strawberries came from Mr. Bennett, of Hatfield. These also received a cultural commendation. Two White-fleashed Melons named The Czar, came from Mr. Ward, gardener to T. N. Miller, Esq., Bishop Stortford, which the Committee thought were very good, but requested specimens to be submitted to them again later in the season. From Messrs. Sherratt & Co., nurserymen, Knypersey Gardens, Congleton, came a dish of the Kumquat, *Citrus japonica*, for the ornamental fruit of which a cultural commendation was given.

**FLORAL COMMITTEE.**—W. B. Kellock, Esq., in the chair. Messrs. E. G. Henderson & Son had a first-class certificate for *Hæmanthus Cooperi*, with large, showy, reddish-orange flower-heads. The same firm also sent *Hydrangea japonica speciosa*, with a broad, irregular white stripe in the centre of the leaf, and which appears likely to be useful as a variegated plant; also a collection of their strain of *Mimulus*, for which a cultural commendation was awarded. Mr. Williams, Holloway, took first-class certificates for *Gymnogramma triangularis*, a very neat little species with pale sulphury-powdered fronds, and a similar distinction was awarded him for the elegant *Adiantum gracillimum*. Messrs. Veitch sent *Azalea* Mrs. Seorer, a very pleasing and effective bright rose-coloured variety, and very free-flowering, though not perfect in outline, and *Tea Rose* Duchess of Edinburgh, which had been before exhibited and reported on, and which now received a first-class certificate. Similar awards were made to Mr. Braid, nurseryman, Winchmore Hill, for large-flowered *Pelargonium* Duchess of Edinburgh, which as a market kind of compact habit and remarkable freedom of flowering, will take a high place; to Mr. R. Dean, Ealing, for bedding *Pansy* White Swan; to Messrs. Jackman for *Clematis* Robert Hanbury; and to Messrs. Lane for *Azalea mollis* Alphonse Lavalée with reddish-orange flowers. Several other varieties of other colours were also exhibited along with it, and had a very showy effect. As a proof of the hardiness of this breed of *Azaleas*, G. F. Wilson, Esq., sent cut flowers from plants which had been exposed to the late frosts, and which were hardly perceptibly affected by them. First-class certificates were also granted to Mr. Croucher, gardener to J. Peacock, Esq., Hammersmith, for *Agave micrantha picta* with leaves striped with greenish white, *Mammillaria longispina* with long paper-white spines, very ornamental, and *Agave filifera superba*; to Messrs. Rollisson, Tooting, for *Hypolepis Bergiana*; and to Mr. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, for *Aquilegia leptocera lutea*, a very ornamental variety with large, yellow, long-spurred flowers. Mr. Fairbairn, gardener to W. Terry, Esq., Peterborough House, Fulham, had a cultural commendation for one of the finest specimens of *Medinilla magnifica* ever seen, having, it was stated, not less than eighty panicles of its rose-coloured flowers.

## EUCALYPTI AND OTHER AUSTRALIAN PLANTS.

A GREAT many questions have of late been asked and answered about the Eucalypti, and probably there will be in this country many too sanguine planters of the different varieties of that tree. The south of France and Algeria, where they have been largely planted, are localities in which we should expect success in the cultivation of Australian plants; but in England, although there are undoubtedly many instances of species of the Eucalypti surviving our ordinary winters, the result can hardly be called encouraging; and those who think with me that it is ever preferable to have a flourishing rather than a mere existing tree or shrub, will do well to pause before they trust to plants whose habitat is found in a climate so essentially unlike our own.

On the Scilly Islands I have seen *E. globulus* (the Blue Gum tree) and *E. obliquus* (the Stringy Bark tree) with an undamaged growth of many years, but owing to their wind-swept position there was the character of large shrubs rather than of trees. In those islands, however, the winter temperature ranges so high that the year passes without more than 1° or 2° of frost. On the adjoining mainland of West Cornwall around Mount's Bay from 4° to 5° may be taken as an average, though in 1873 and 1874 not 2° seem to have been registered. Through this *E. globulus* and *E. amygdifolius* passed undamaged even in their tender autumnal shoots. And here it seems to me it is that the great difficulty in the cultivation of these trees will be expe-

rienced. Like other natives of the antipodes their seasons of growth are the contrary to our English ones, so that in late autumn we find shoots that require a summer's ripening. Instead of which they are at once exposed to autumnal frosts. In some measure, no doubt, acclimatisation would gradually obviate this natural tendency; but such an annual nipping will not only injure the growth and consequent appearance of the tree, but will also eventually impair its vitality.

But even supposing that *E. globulus*, of which such great sanitary properties are reported, would stand our English climate, I much doubt whether our landscape scenery would be benefited by its introduction. The dull blue tint of its foliage, described as so monotonous in its native habitat, might indeed here and there serve as a foil to our own light shades of green, but certainly it would be no desirable general feature; and further, at its best the tree has, I am told, a ragged untaking appearance.

Some time hence I may be able to say more about these trees, for I have planted out several varieties, including *E. globulus*, *E. obliquus*, *E. armigerus*, *E. viminalis*, and *E. Riseloni* (?), so at least was the seed named from which the last-named plants were raised, but I have not been able to certify the correctness of this name, so some better-informed person may, perhaps, be able to set me right about it.

I am experimenting upon many Australian and Tasmanian plants—*Acacias*, *Hakeas*, *Melaleuca*, *Kennedya*, and others. All these have stood uninjured through the past winter, but that was far too exceptional to warrant any general conclusion. *Acacia dealbata*, however, I have seen near Penzance 20 feet in height, and of beautiful form, and its end came through wind, not frost.—W., *South Cornwall*.

## NOTES AND GLEANINGS.

THE fine Bhotan *Rhododendron Nuttallii* is now flowering in the collection of C. M. Major, Esq., Cromwell House, Croydon. The truss of bloom, which consists of seven flowers, measures upwards of a foot across; the flowers are funnel-shaped and pure white within, saving a tinge of gold colour in the throat; the outside, however, is suffused with a delicate shade of light rose.

— AT THE WIMBLEDON HORTICULTURAL SOCIETY'S EXHIBITION on June 10th and 11th, there are seven classes, open to all comers, nurserymen excepted, to which we would call the attention of amateurs round London—viz., for nine miscellaneous Foliage or Flowering Plants, first 80s., second, 60s., third 40s.; six Tricolor Geraniums, 30s., 20s., 10s.; six Fuchsias, 40s., 30s., 20s.; six Exotic Ferns, 40s., 30s., 20s.; collection of Fruits, six sorts, 40s., 30s., 20s.; collection of Vegetables, twelve varieties, 40s., 30s., 20s.; twenty-four Roses in pots (not exceeding 8 inches in diameter), a silver medal.

— AT the banquet given by the First Lord of the Admiralty and Mrs. Ward Hunt to the Duke and Duchess of Edinburgh, at the Admiralty, the entire floral decorations, bouquets, &c., were supplied by the Pine-Apple Nursery Company. They were profuse in number and of the choicest description. Among them were exquisite Orchids, fine specimens of *Anthurium Scherzerianum*, *Curelugo recurvata variegata*, *Cocos Weddeliana*, the new *Dracæna Baptistii*, *D. Shepherdii*, *D. imperialis*, and *D. Fraseri*, also *Pandanus Veitchii*, and *Adiantum farleyense*.

— THE decorations of the premises of Messrs. J. Weeks and Co. on the occasion of the opening of the Chelsea Thames Embankment were very effective. Draped archways, trophies, and flags were well arranged, but the plants and floral decorations, as was to be expected, were especially excellent and admired. *Azaleas*, *Clematises*, *Roses*, and other popular plants were there in profusion, and among the more rare were splendid specimens of *Dracæna terminalis*, *Dracæna australis*, *Yuccas*, &c., forming a display seldom seen in out-door decoration.

## ARISTOLOCHIAS.

PLINY, about 1800 years ago, wrote of these, "They are in the number of the most celebrated plants." He referred to their reputed medicinal qualities, but his character of the genus is now applicable if we only consider the beauty, extraordinary form, and size of the flowers of the stove species. We refer to our notes at random, and the first we have there is *Aristolochia gigas*, which flowered in Europe for the first time at Chiswick in 1811. Hartweg sent it from Guatemala, and its flowers astonished everyone, for they are the largest of

known flowers, except those of *Rafflesia*, they are marvellously mottled, and marvellously ill-smelling. *Aristolochia saccata*, or Pouch-flowered. Native of Silhet. Flowered in the Edinburgh Botanic Garden during the autumn of 1829. Its flowers, purple, pink, and yellow, are handsome as well as peculiar of form. Their smell attracts, and their form is calculated to imprison, insects. Professor Graham remarked on it:—

“The large heavy pouch in the middle of the tube neces-

sarily keeps the flower pendulous, and its throat erect. Having removed from the plant one of its racemes for examination, I laid this down on the table, and was surprised to observe a crowd of small flies immediately rush out at the throat. I raised the flowers into their natural position again; and though I saw, by placing them between me and the light, that very many flies were still in the tube, all very restless, and attempting to escape, not one could climb up the now



ARISTOLOCHIA GALEATA.

erect throat. I repeated this experiment many times, and always with the same result. In the horizontal position of the flower the flies came out instantly, in the erect position they were imprisoned. I could not discover, even with the microscope, any cause for this, and am forced to suppose that there may be a particular condition of the surface in the upper part of the tube, from secretion or other cause, which prevents the adhesion of the feet of the insects, though they are able to walk along it when horizontal.

“It is supposed that the confinement of insects in flowers is to effect their impregnation, and it has been thought that the decay of their bodies in other parts, as in *Dionæa*, *Nepenthes*, and *Sarracenia*, tends to the nourishment of the plant. The first I believe is sometimes true; and though I discredit the second theory, I have not in every supposed in-

stance the means of disproving it. In the case under consideration, and I believe in others, the object seems altogether different. Years ago, I observed a living worm on several of the decayed leaves of *Dionæa muscipula*, and was induced in consequence to suspect that the capture of certain insects by this plant was not for their destruction, but to provide a proper nidus for their eggs; and I more confidently believe this to be the case with *Aristolochia saccata*; for in all the flowers of this plant which I opened, I found many perfect eggs and many living maggots.”

*Aristolochia Thwaitesii*.—Sir W. Hooker says, “It flowered in the stove of the Royal Gardens early in March, 1856. It is the handsomest of all the East Indian *Aristolochiæ*, and remarkable as well for the peculiar form of the perianth as for the long narrow leaves. The flowers emit a fragrant smell, a

good deal resembling that of *Caladium* (or *Colocasia*) *odorum*. It appears easy of cultivation, and flowered in March."

Then within the last two or three years we have had *Aristolochias Duchartrei* and *tricaudata*, both very showy, and the last devoid of any offensive smell. Lastly, we have *Aristolochia galeata*, of which we publish a portrait and description from Mr. W. Bull's catalogue:—"A free-growing stove climber, introduced from Bogota. The stems are terete, and furnished with heart-shaped leaves, abrupt at the apex, and having a broad open sinus at the base. The flowers are axillary, cream-coloured, reticulated with purplish veins; the tube ovate, ventricose, and abruptly curved, expanding into a two-lobed limb, which is 6 to 7 inches long, the upper lip shorter and rounder at the extremity."

### THOMAS TUSSER.—No. 2.

ALTHOUGH Tusser had been to Wallingford College, and under Redford at St. Paul's, they were only "song schools;" and when the time arrived that he might in the usual course proceed from the choir to the University, he must have been deficient in the needful classical acquirements. To remove this disqualifying deficiency he tells—

"From Paul's I went, to Eton sent,  
T' learn straitways the Lat in phrase,  
Where fifty-three stripes given to me  
At once I had,  
For fault but small, or none at all.  
It came to pass, thus beat I was;  
See, UDALL, see, the mercy of thee  
To me, poor la!"

This determines the date of his being at Eton, for Nicholas Udall was head master only for eight years—from 1534 to 1542. Subsequently, by a curious but unimportant coincidence, he became vicar of Braintree. He wrote the first known English comedy, "Ralph Royster Doyster," and he wrote it to be performed by his Etonian pupils. It was printed in 1545, but was not known to us moderns until a copy was discovered in 1810.

It requires no forced imagination to believe that one of the boys Udall had in view when he wrote it was Tusser, and that the part of "Timothy Trusty" was the part he played. There may be no support to this opinion that the initials are the same, and that a song had to be sung by someone capable, which we know was a qualification of Tusser. The song deserves to be reprinted as one of the three earliest specimens of such popular vocal performances.

"Who so to marry a minion wyfo  
Hath hadde good chance and happe,  
Must love hir and cherishe hir all his life,  
And dandle hir in his lappe.  
If she will fare well, yf she wyll go gay,  
A good husbunde ever styll,  
Whatever she lust to doe, or to say,  
Must lette hir have hir owne will.  
About what' affaies s'ever he goe,  
He must shewe hir all his mynde;  
None of hyis counsell she may be kept fice,  
Else is he a man unkynde."

An election takes place annually from Eton to King's College, Cambridge, and whether he was so elected, or whether he was sent thither as a supernumerary of the Royal Choir we have failed to discover; but after an intermediate sojourn thither he went, if Coles the antiquary, quoting from Hatcher's MS., be correct. There is a doubt on this, however, for the Rev. T. F. C. Huddleston, Bursar of King's College, informs us that "William, not Thomas, Tusser was elected a scholar there in 1543, being at the time (August 10th), sixteen years of age, and born 'in villa Ruyahall, com. Essex.' He was subsequently admitted Fellow of the college, after the expiration of his three years' probation, on August 16th, 1546." That William Tusser, according to the pedigree we have, was the next and youngest brother of Thomas. If Thomas Tusser was even temporarily a scholar of King's College, for some unexplained cause—probably the dissipation—he rejoiced to leave it and become fixed at Trinity Hall. All this he told in these eight lines—

"To London hence,\* to Cambridge thence,  
With thanks to thee, O Trinity,  
That to thy Hall, so passing all,  
I got at last.  
There jay I felt, there trim I dwelt,  
There heaven from hell, I shifted well,  
With learned men, a number then,  
The time I past."

What extent of classical learning he attained we do not

That is from Eton,

know, but his published translations from St. Augustine and St. Barnard testify his knowledge of Latin.

What was the date of his entry at Trinity Hall we cannot tell, for a letter now before us states that the oldest of its existing Registers goes no further back than 1581.

Whilst he was at Trinity Hall the well-known Stephen Gardiner, Bishop of Winchester and Chancellor of the University, was its Master, but Tusser, unlike that Master, was not a Roman Catholic. Luckily for his bodily welfare he was a scholar after the dietary was reformed. The founder of the Hall, William Bateman, had so restricted the diet of the students, that rather less than half a century before Tusser entered it, when Dr. Arundel, Archbishop of Canterbury, made his metropolitan visitation, he gave permission to the Fellows to spend "two-pence for the week days and a groat for the Lord's day." If this was an enlargement, what could have been the commoners' allowance? Certainly too spare, though a fat capon then sold for 2½d., and a lamb for 4d., and though, as Fuller adds, "scholars, like hawks, fly best when sharp, and not full gorged."

How long Tusser remained at Cambridge we have no certain information, but continued ill-health compelled him to leave, and he did so without intending to return, for he tells—

"Long sickness had, then was I glad,  
To leave my book, to prove and look,  
In Court what gain, by taking pain,  
Might well be found."

This was the early manifestation of his predominant characteristics—energy to commence, readiness to fail, and willingness to seek success elsewhere. It is probable that he left Cambridge about the year 1545, for he remained afterwards ten years in London, then went to Catiwade, and whilst there, in 1557, published his first book on husbandry.

Lord William Paget aided him whilst in London, or, as Tusser tells it,

"That same was he, enriched me  
With many a pound."

During these ten years of Court-dangling both his parents died; there was the struggle for Protestant ascendancy; there was the usurpation of Lady Jane Grey, and there was the succession of Queen Mary. Roman Catholicism was then predominant; the Pagets swam with the stream, but Tusser was a Protestant.

"Then Court gan frown, and strife in town,  
And lords and knights saw heavy sights.  
Then took I wife, and led my life  
In Suffolk soil."

In other words he, who had no experience in farming, sought to obtain from it a living, and he rented a farm formed by the union of many small holdings, such as caused his contemporary Bishop Latimer's complaint—"Where have been many householders and inhabitants, there is now but a shepherd and his dog."

The farm taken by Tusser was Braham Hall, in the parish of Brantham, near Catiwade, in Suffolk, a few miles from Manningtree, in Essex. There is no record of him in the parish books; the church registers extend no further back than about 1624. Braham Hall was moated, and had to be reached by passing over a drawbridge; but all those are things of the past. The old house was pulled down, and the present house erected about fifty years since.

Though Tusser had had no practical acquaintance with farming, he had lived chiefly in the country; his father probably cultivated the land appended to his residence at Rivenhall, and during these opportunities Tusser had been a close observer of the times and practices then deemed best for successful farming. Evidence of this is his first published work, and we believe him to say only the truth when he wrote—

"By practice and ill-speeding  
these lessons had their breeding,  
and not by hearesay or reading  
as some abroad have blowne."

It is entitled, "A Hundreth Good Pointes of Husbandrie."

"A hundreth good pointes, of good husbandry,  
maintaineth good household, with huswifery.  
Huskeping and husbandry, if it be good,  
must love one another, as cosines in blood.  
The wife to, must husband as well as the men;  
or farewell thy husbandry, doe what thou can."

That is all that is printed on the title-page; and on the last of the twenty-six small quarto pages which comprise the entire work is, "Imprinted at London in flete strete within Temple barre, at the signe of the hand and starre, by Richard Tottel the third day of February, An. 1557. Cum privilegio ad im-

primendum solum." So that he must have begun with his pen almost as soon as with his plough, for the work is dedicated "To the right honorable and my special good lord and maister, the lord Paget, lord privie seal," an office his lordship first attained in 1555, and in that year we have seen it is probable Tusser went first to Braham. Some of the lines in the dedication confirm our opinion as to the cause of his leaving London—namely, that the Roman Catholic faith prevailed, and was accepted by his patron; so as he remained a Protestant, he observes, "More in Court I may not be." There he evidently had devoted himself to singing not only in the choir but on festive occasions, for in the same dedication he says—

"So synce I was, at Cambridge taught,  
Of court ten yeres, I made a say:  
No musike than, was left unsought,  
A care I had, to serve that way."

He from the first found that though he could tell what ought to be done, he could not do it himself profitably, for there is a shadow over these last lines of the dedication—

"My musike synce, hath been the plough,  
Entangled, with some care among:  
The gayn not great, the payn enough,  
Hath made me syng, another song."

We will make a few extracts from this unique pamphlet, for, besides the copy at the British Museum, none other is known. Our extracts shall be confined to subjects appropriate to our pages.

In October he directs—

"The moone in the wane, gather fruit on the tree:  
The riper the better, for graffe and for thee."

In November—

"Set gardeine beanes, after sainte Edmunde the king:  
the moone in the wane, thereon langeth a thing.  
Thencease of one gallande, well proved of some:  
shall pleasure thy household, ere posked time come."

In March he makes a digression to "a point or two of huswifrie," for the wife was then the garden manager—

"In Marche and in Aprill, from morning to night,  
in sowing and setting, good huswives delight.  
To have in their garden or some other plot:  
to trim up their house, and to furish their pot.  
Have millions at Michelmas, pearsnes in lent:  
in June buttred beanes, saveth fish to be spent."

In June, writing of bees, he says—

"At Christmas take hede, if their hives be to light:  
take honey and water, together well dight.  
That mixed with straws, in a dish in their hives:  
they drowne not, they tigh not, thou savest their lyves."

## PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

**XIPHIUM SISYRINCHIUM.** *Nat. ord., Iridaceæ. Linn., Triandria Monogynia.*—"This lovely little plant is the most widely diffused of all the Iridæ, extending from Spain and Morocco to Turkey and Egypt, in Europe and Africa respectively, and thence eastward through Syria and Arabia to Afghanistan and Beloochistan. It further, probably, passes the confines of the British Indies, as my correspondent, Dr. Aitcheson, informs me by a letter just received that he has found a bulbous Iris in the North-western Punjab, which, from his description, may well be this. It will be observed that this is the *Moræa Sisyrrinchium* figured in this work (tab. 1407), but so indifferently as hardly to be recognisable. It was introduced into England before the days of Gerard (1597), but is still scarce, being often killed by frost. The plants here figured flowered at Kew in May of last year from bulbs sent by D. Hanbury, Esq., F.R.S., from Calabria. The bulbs are said (*Bot. Mag. l.c.*) to be eaten in Spain and Portugal, whence Gerard and Parkinson called them Spanish nuts; but I cannot confirm this statement."—(*Bot. Mag.*, t. 6096.)

**ECHINOCACTUS CUMINGII.** *Nat. ord., Cactaceæ. Linn., Icosandria Monogynia.*—"A very elegant little globose Cactus, with rather large bright golden flowers, communicated to Kew by Mr. Pfeisdorff in June of last year; it is stated by Labouré and Salm-Dyck to be a native of Bolivia, and to be very rare in Europe, but one specimen, according to the former author, existing in France (in 1847), which was in the collection of M. Andry, of Chaillot. I give it the name under which Mr. Pfeisdorff sends it, assuming it to be correct: it agrees with Labouré's character in everything but the size of the flowers, which are described as "petites," whereas these are of con-

siderable size in proportion to the size of the plant."—(*Ibid.*, t. 6097.)

**EPIDENDRUM (BARKERIA) LINDLEYANUM.** *Nat. ord., Orchidaceæ. Linn., Gynandria Monandria.*—"E. Lindleyanum is a native of Costa Rica, where it was discovered by the late Mr. Skinner. The specimen here figured flowered in Mr. Veitch's establishment in December last, and has larger flowers of a paler colour than those of the plant figured by Bateman, and by Paxton in his Magazine."—(*Ibid.*, t. 6098.)

**SENECIO (KLEINIA) ANTEUPHORBIUM.** *Nat. ord., Compositæ. Linn., Syngenesia superflua.*—"The subject of the present plate is one of the oldest Cape plants in cultivation, having, according to Dodonæus, been brought to Europe in 1570, and cultivated in England in Gerard's garden in 1596. Nevertheless, its recent South African habitat is up to this date unknown, no accurate description of it has hitherto appeared, and it has been but once seen in flower in Europe until I received the specimen from which the accompanying drawing was made in January last from Mr. T. Hanbury's garden at Palazzo Orenco, near Mentone."—(*Ibid.*, t. 6099.)

**REGELIA CILIATA.** *Nat. ord., Myrtaceæ. Linn., Polyadelphia Polyandria.*—"This genus, named after the distinguished and indefatigable botanist and Superintendent of Culture in the Imperial Botanical Gardens of St. Petersburg, consists of three West Australian plants, which, with the habit of *Metrosideros*, are closely allied to *Beaufortia*, differing chiefly in the form of the anthers and number of ovules. By far the finest of them is the *R. grandiflora*, *Benth.*, which has never yet been introduced into cultivation, and in which the apparently scarlet bundles of stamens are an inch long, and the leaves, which are many times larger than those of *R. ciliata*, and clothed with a white silky pubescence. All are greenhouse hardwooded plants. The species has been cultivated for some years at Kew, flowering in September, and I have also received it in a flowering state from Messrs. Backhouse, of York."—(*Ibid.*, t. 6100.)

**SENECIO DORONICUM var. HOSMARIENSIS.** *Nat. ord., Compositæ. Linn., Syngenesia superflua.*—"A very handsome and not uncommon South European plant, extending from the Pyrenees to Transylvania, inhabiting considerable elevations in those countries, attaining a foot or two in height, with heads 2 inches in diameter. On the southern shores of the Mediterranean it has hitherto been found only in the northern mountains of Morocco, where it was discovered on Beni-Hosmar, a rugged limestone mass close to Tetuan, by Messrs. Ball, Maw, and myself in April, 1871, at an elevation of about 3000 feet, growing in dry rocky places. In this state it forms a very pretty rockwork plant, flowering in May in England. The specimen here figured is from Mr. Maw's rich garden of herbaceous plants at Benthall Hall, near Broseley, in Shropshire."—(*Ibid.*, t. 6101.)

**ROSE—Prach Blossom.**—"This new Hybrid Perpetual Rose is a large, full, and exquisitely shaped flower, the tint being that of a delicate peach-blossom, a colour which we have not hitherto obtained amongst Hybrid Perpetual Roses. The growth of the plant is vigorous, and the constitution hardy; and while from its size, symmetry, and fulness it is a desirable variety for the exhibitor, it is, on account of its colour, hardness, and freedom of growth and flowering, of undoubted value as a decorative Rose for the garden.

"It is, moreover, a veritable English Rose, having been raised by Mr. William Paul, of the Nurseries, Waltham Cross, from English seed, and being one of a very few selected by him from some thousands of seedlings. It has, we are informed, been three years under trial, and proves constant both in character and colour."—(*Florist and Pomologist*, 3 s., vii. 97.)

**GOOSEBERRIES—Catherina—Henson's Seedling.**—"Catherina was obligingly sent to us last season, with many others of excellent quality, by Mr. C. Lister, of Macclesfield. It is of large size and very handsome appearance; it belongs to the class of hairy yellows, and being possessed of a good flavour, it is in every way deserving of cultivation for its quality as a dessert fruit, as well as for its merits as a favourite exhibition kind.

"Henson's Seedling is a novelty brought before the Royal Horticultural Society last year by Mr. Henson, of Newark, near Peterborough, when it was found to be of exceedingly good quality, and was awarded a first-class certificate as a new and distinct variety. It is stated to be a chance seedling, having been originally taken from a hedge in the neighbourhood of Peterborough, and not a garden-raised sort. However this may be, it is a finely-flavoured variety, well worthy of culti-

vation as a dessert fruit, and though not large enough to rank amongst the show kinds, is quite large enough for general purposes. It belongs to the hairy-red section."—(*Ibid.*, 109.)

### CHISWICK HOUSE.

#### THE PROPERTY OF THE DUKE OF DEVONSHIRE.

THERE was a house here built at the commencement of the seventeenth century by Sir Edward Wardour, which was pulled down in 1688; on its site stands the present mansion, erected in 1729 by the celebrated Earl of Burlington, and by marriage it passed to William, fourth Duke of Devonshire. Kent, the noted landscape gardener and architect, carried out the work under the Earl's supervision.

Of that house we have a contemporary drawing, and it justifies Lord Hervey for ridiculing it as being "too small to inhabit, and too large to hang to one's watch." Two wings were added to it in the present century, which render it more commodious without injuring its beauty.

We have no vocation or space for dwelling on the very contrasted celebrities who have resided here. Carr, infamous Earl of Somerset, in the reign of James I.; Lord Paulet, the royalist, yet protégé of Sir Thomas Fairfax, the Parliamentary General; James the rebel Duke of Monmouth. Charles Fox and George Canning died here. From Lord Paulet it had passed to Lord Crofts, who sold it to Lord Gerard, of Brandon, from whom it was purchased by Viscount Ranelagh; from him by Edward Seymour, Esq., of Newton Bradley, who sold it about 1685 to the Earl of Burlington.

We have letters from some of those celebrities dated from Chiswick, and from these we could glean many amusing notes. The wall round the churchyard has a stone let in, which states that this wall was erected by Earl Russell to prevent the incursions of swine, and an explanatory sentence in one of the letters says, "Those on four legs were intended." The curfew used to be rung every night till within the last few years. The churchyard has been added to from time to time by gifts of land from the Dukes of Devonshire, and the new portion is neatly kept turfed, and the unoccupied parts cheered with flowers. Slut's Hole between the churchyard and the river was probably the original village, and is the head-quarters of the fishermen. Despite its lying low, with the river on one side and the churchyard on the other, there have been many instances of extreme old age among its dwellers. In the churchyard is Hogarth's tomb, Lord Macartney's, and Philip James de Loutherbourg's the landscape painter. At one time a cheese fair was held on The Mall, and it has been suggested that this originated the name Cheese-wick, but this is not so. It is pure Anglo-Saxon—Chis-wick, a residence on sand. Chiswick Hall, once Whittingham's printing office, is about to give place to villas.

Chiswick, without doubt, was originally mainly a fisher village; but in the days when roads were bad, or rather when there were no roads at all, as people at the present time would understand them, it had, from its position on a tidal river, an easier and more speedy mode of communication with London—namely, by water. Still, through its northern side passed the great road to the west and south-west of England, and along it travelled at a later date some 120 four-horse coaches a-day. To the improvement of the roads, no doubt, was due that close connection which has so long existed between Chiswick and gardening. Its soil is of a free loamy nature, neither too stiff for vegetable crops nor too light for fruit trees, of good depth, and underlying this is gravel and sand, rendering drainage, except for surface water, unnecessary. Market gardens sprung up and flourished, farm culture gave way before them; and though now in turn giving place to buildings, still they cover a great extent of ground, and those of Dancer, Jessop, Mills, and Bagley for quantity and quality of produce, and even for neatness of keeping, are not exceeded by the best-kept private gardens in the country. The fruit plantations of Mr. Dancer, when in blossom, form one of the grandest of floral displays, but his Plums when ripening, in a good year, are a sight that will be remembered, the branches supported by props—anything that can be had to prevent their breaking down with the weight of the crop.

While we have thus digressed upon the market gardens we have not forgotten that these had in one instance to make way for a garden of another description—that of the Horticultural Society, which was established in 1823 on the property of the late Duke of Devonshire, who as a lover of gardening and the friend of Paxton will long be remembered after his name

as a leader of fashion shall have been forgotten. It was there that Paxton first met the Duke, and may be said to have commenced that career which led to fame and fortune. All this, it may be said, has nothing to do with the grounds of Chiswick House, but it is difficult to dissociate the Society's gardens from those of Chiswick House, however different their work and objects; the same broad shady avenue of Lime trees led to both, both had the same head, and thousands of visitors on many a July Show passed from the grounds of the Society to those of the Duke when it was but a few steps from the one to the other. To these and many more the handsome wrought-iron gates which form the principal entrance to the grounds are familiar, as well as the leafy screen of Lime trees which extends along each side of the drive.

Reaching the west end of the villa we will now take a glance at the grounds in which it is seated. Here the front of the house is partially shut out from distant view by five noble Cedars of Lebanon, which must be between 70 and 80 feet in height, standing on the lawn. Formerly there were six, forming a kind of avenue, but one of them died. To compensate for the deficiency there is a Deodar planted by the Emperor Nicholas of Russia on his visit in 1844, and now upwards of 40 feet high. The lawn terminates on the west side in a semi-circle, with seats and figures dug out of the gardens of Hadrian's villa at Rome. A walk between two Yew hedges some 16 feet high, with antique busts let in at intervals, takes a westward direction, and terminates about 200 yards off in an alcove with a bust of Napoleon I. by the celebrated Danish sculptor Thorwaldsen. This is known as Napoleon's Walk, and is a favourite resort in summer. The next feature claiming attention is a statue of Venus on a column, around the square base of which the ground is carpeted with Ivy, and the whole is surrounded by a circle of vases. Two fine Portugal Laurels are here noteworthy for their great size, but they are in fact an assemblage of plants, the branches of the original ones having layered themselves. Pursuing our way westward we pass a number of younger Cedars than those previously referred to, and beautiful Evergreen Oaks, with masses of Rhododendrons. What is called the Bay Ground, from its containing a number of Bays, is next reached, and this affords a beautiful view across the ornamental water of an alcove copied from the portico of St. Paul's, Covent Garden, with an obelisk surrounded by water. In the shrubberies here as well as elsewhere Mr. Edmonds pointed out several cases of natural grafting, especially in Hollies and Yews, arising from branches crossing each other or being forced back on the trees from which they sprung. Passing on by a shrubby walk amidst Box, Yews, and Rhododendrons, of which last one very large plant is constantly increasing in size by layering itself, we note a fine Wellingtonia 40 feet high, and near the handsome Palladian bridge over the canal two noble specimens of the Wych Elm.

Crossing the bridge we pursue a walk skirting the park, and by the side of which are Hollies in great variety, Golden Yews, Balearic Box, noticeable by its fine foliage, Magnolias, and a handsome tree or two of the Deciduous Cypress. We have all heard of wonderful instances of grafting totally dissimilar plants, but most of them have no more foundation in fact than the apparent union of a May Duke Cherry tree and a Birch which here occurs. Dr. Lindley accurately described it as follows in his "Theory and Practice of Horticulture":—"In the park of the Duke of Devonshire, at Chiswick, there is a very old Cherry tree, which has been decayed in the centre for many years. Its hollow trunk has been occupied by a common Birch tree, so that the same stem appears to support a top composed of Birch and Cherry branches. The Cherry trunk is  $7\frac{1}{2}$  feet in circumference, and 6 feet in height to the place where the branches diverge from it. To this height the Cherry tree once completely enveloped the Birch; but of late years the diameter of the Birch has increased so much that it has burst the decaying case of Cherry wood on the north-east side, where it is partially exposed to within 18 inches of the ground. Below this the cylinder of Cherry wood is still complete. It is not surprising that the Birch should have burst the Cherry on the north-east side, for that side has usually the thinnest layers of wood, and would consequently give way the soonest to the expanding force of the Birch. The latter is now above 50 feet high, and measures 5 feet 4 inches in circumference at 6 feet from the ground, where it issues from the hollow Cherry. The portion of Cherry tree still alive is 20 to 25 feet high." The Cherry tree is now dead, though a portion of it survived till a few years ago and even bore fruit.

This walk terminates in a circle having for its centre a magnificent Oriental Plane with a stem 15 feet in circumference at 4 feet from the ground, and nearly 22 feet at the base, while its branches spread over an area 35 yards in diameter. Indeed the tree, on account of its great size and beauty, was taken in from the park, and it bears a tablet on it inscribed with the name of the Grand Duchess Maria Nicolaiewena, who much admired it on her visit in October, 1853. In the park beyond a very large May Duke Cherry, forty years old, forms a conspicuous object when, as we saw, it is smothered in blossom.

Continuing to skirt the park by another walk, by the side of which are such ornamental Hollies as Hodgins's, ovata, &c., it was noticeable that the leaves of all these, as well as the other Hollies about the place, were covered with patches caused by the grub of *Phytomyza Ilicis*, which here, as elsewhere, has been very

active in disfiguring the foliage. Passing on we gain a view of the south-west side of the house across the water; a fine *Lucombe Oak* occupies the foreground, *Portugal Laurels* and *Rhododendrons* fringe the lawn on each side to the water, and then the lawn beyond rises towards the house and is dotted with many striking specimen trees. We might note on our journey several more picturesque Cedars, a large *Hornbeam*, &c., but we reach the obelisk at the end of a vista forming the subject of the accompanying engraving, which is from a photograph by Mr. Hockley, of Hammersmith; we must add that close to the point whence the view is taken, near Burlington Lane, are some noble *Evergreen Oaks*. We now proceed by a walk along a high bank, from which, however, the public road is concealed by planting, in which common *Lilacs* enter largely next the roadway, and during the short period they are in flower they



VIEW IN THE GROUNDS OF CHISWICK HOUSE.

present a mass of blossom, which has a beautiful effect. This, and the fact that the place is a favourite resort of the nightingale, makes it a favourite evening's walk with the dwellers in the neighbourhood. It may be added, that *St. John's Wort* and *Ivy* are used on the margins of the shrubbery walks instead of grass and with good effect, whilst, of course, a great expenditure in mowing is saved.

On the south side of the house, which we now come to, is a broad avenue of *Lebanon Cedars*, most of which are comparatively young, but those nearest the house are aged and noble specimens, one of which has a stem 14 feet in circumference; and another of about the same size, having some years ago been detected leaning over, and the ground about its roots upheaved, has been successfully retained in its place by a heavy framework of wood, which, though no ornament, has certainly the merit of having saved this fine tree from destruction. Numerous ancient busts are introduced at regular distances along each side, and there are likewise some pieces of sculpture. Here a view of the Thames on the other side of the meadows comes in with good effect.

Passing round the house we notice a large *Wistaria* only a year or two younger than that which covered a large extent of south wall in the Horticultural Society's Chiswick Garden before it was cut up, and which was one of the oldest two plants in the country; and noting also a few good specimens

of the *Douglas Fir*, *Pinus Lambertiana*, and *P. Laricio*—although, be it remarked, *Conifers* in general do not attain great dimensions in the neighbourhood—we come at last to a gate "Built by Inigo Jones, at Chelsea, 1621, given by Sir Hans Sloane, Baronet, to the Earl of Burlington, 1738," which is a handsome piece of stonework, and which leads to the flower garden. At right angles is a fine *Yew* hedge facing west, with, on the opposite side of the walk, a ha-ha; and facing curved recesses in the hedge are *Golden Yews* looking very bright, and affording a marked contrast to the sombre aspect of the hedge. By this gateway we pass to the conservatory, 300 feet long, but of no great width, having a domed centre forming rather more than a semicircle. Here there is a magnificent display of *Camellias*—the house is *Camellias* from end to end, and the effect of their thousands of red and white flowers, self, and striped, and mottled, is one that cannot be forgotten, and in autumn the *Fuchsias* trained on the rafters are scarcely less effective. On the front stage flowering plants are introduced according to the season, but respecting these we need not enter into particulars. There is a small *Orchid* house at the end, but only a few of these plants are cultivated, the remaining occupants being *Crinum*s and some fine-foliaged plants. Outside, in the bed extending along the front of the conservatory, there was an excellent show of *Pansies*; but the elegantly-designed flower garden

was only in course of preparation for the reception of the 13,000 bedding plants which are required to render it gay during the summer months.

Since His Royal Highness the Prince of Wales has made Chiswick House his town villa, and has his own larger sources of supply, the kitchen garden and the park are left off, so we have no notes to make on the fruit and vegetable gardens, although those in the neighbourhood would afford a fertile theme to discourse upon. In fact, the place, like Holland House, Kensington, is becoming year by year more tightly engirdled by buildings. The late Duke expended much in endeavouring to plant these out; the present one is yielding to the inevitable logic of facts, and they are springing up on the outlying portions of the estate, but those which are being erected are villa residences, and very different from the miserable dwellings which rendered the New Town of Chiswick a disgrace and burden to the parish, where the Asparagus beds were levelled into the alleys and the foundations laid; where the shells were mortgaged before the roofs were put on, and a fresh mortgage made before the houses were rendered fit—no, not to be tenanted, but to be let. This drove away many of the better-class of residents; this made Chiswick the dwelling-place of the labourers of adjoining parishes, who, when work failed, became a heavy burden upon it. But now improvements are being actively carried out, there is a hope of sewage being more satisfactorily disposed of than being carried into the Thames—for the main drainage terminates with the adjoining parish of Hammersmith—and Chiswick bids fair to be, what it once was, one of the most fashionable places near London, as it has for years been, in spite of all drawbacks, one of the most healthy. And here it may be noted that places near a tidal river enjoy a continual change of air; twice a-day the tide rises, twice falls, and an immense bulk of air is thus displaced four times a-day as if by the bellows—blown in and sucked out, for the water must be replaced by air. Still, favourable as the locality is to health, it is not altogether so for gardening, as from the high ground of Acton and Ealing the cold air sinks by its gravity into the valley, making the frosts in winter severe, and fruit crops precarious in spring, while in summer the heat is often intense.

With these remarks we shall quit Chiswick, its gardens, and its gardeners, adding that among the many worthies of those which are Mr. Edmunds, the Duke of Devonshire's steward, whose genial face has been so often and so long seen at the Fruit Committee Meetings at Kensington.

## NOTES ON VILLA AND SUBURBAN GARDENING.

*The Green Fly.*—If slugs and snails are the terror of gardeners in reference to their culinary crops and other productions near the surface of the ground, the numerous tribes of aphids are equally obnoxious to the well-being of his trees and shrubs. They also thrive with provoking fecundity in frames and green-houses. The present season is distinguished by the ravages of these minute creatures, who do injury in various ways. They do not eat up the plant on which they dwell, but they constitute a sad incubus on its power of life, both by their own pressure and by the gummy excrement they so plentifully discharge. Gardens are so generally infested by these insects, and the damage they do is so well known, that any contribution to the modes of counteracting their influence must be acceptable.

It is well known that tobacco smoke, when properly applied, effectually clears the plants in a frame or greenhouse from the aphids; but the same agent when used in the open air is almost useless, for although a puff of smoke will dislodge the enemy it does not kill it—it is only intoxicated for a time, and will speedily return to its predatory attacks. Having myself a collection of Roses scattered rather plentifully over about an acre of ground, and all much disfigured with green fly, I therefore commenced operations with gas water. Having diluted it with six times its bulk of water I plentifully syringed some climbing Roses trained against a wall, but to my vexation the insects were unmoved either by the smell or the taste of the dose. What followed I relate as a warning. If the aphid was unaffected by the gas water, other things were not. Despairing of clearing my trees by any solution or decoction, I resolved to have recourse to the labour of the hands, and recklessly to crush the bodies of those I could not poison. I went over the bushes and drew my fingers up the shoots infested, thus slaying thousands in a minute. In this way I pressed to death all that I found on the Rose buds. The operation is very disagreeable, but it is more effectual than any other I know. As the juices of the insects thus destroyed form a sort of gum on the branches, they must be well syringed with water as you proceed. By this mode I have brought the enemy under, although he is far from being quite

destroyed. As the aphides begin to move when the branch is disturbed, I think the shoot which is covered with them should be held over a basin of water, and then gently brushed so that the insects may fall into the basin. These modes of procedure may appear very tiresome, but it is to be understood that a well-regulated garden is only made so by tiresome processes.

Those who require *Cinerarias* for early blooming must sow the seed in May or early in June. There is an important reason for early sowing which, perhaps, many amateurs may not quite understand. It is this: Unless you have strong healthy plants with their pots full of roots by the end of September they will not flower before the beginning of the new year, whereas by sowing early and shifting the plants on during the summer as fast as the pots are full of roots they will commence flowering by the beginning of November. The seed should be sown in a deep pan or in a 10 or 12-inch pot. Fill the pan to the required depth with fine soil, and well water it before sowing the seed. Then place the seed-pan in a warm shady house or pit until the seedlings are large enough to pot-off singly in 3-inch pots. After they are potted place a frame under the shade of a north wall, and cover the bottom with a layer of coal ashes. This must be their summer quarters, for *Cinerarias* cannot endure the summer sun, but they must have an abundance of air both night and day when there is no appearance of frost. Good turfy loam three parts, and old rotten dung one part, will grow *Cinerarias* to perfection, but it must not be sifted. Plants for later blooming may be raised from seed sown as late as the middle of July, and receive the same summer treatment as advised for those raised from the first sowing.

*Watering.*—This matter of watering is one much less understood than it should be, but the more it is understood the lighter becomes the labour. As a rule, water should never be given until the further withholding of it would be detrimental to the plants. Habitual watering does, in the majority of cases, more harm than good. Plants left to battle with drought send their roots down deep in search of moisture, and when rain does come they benefit more by it than those that have regular watering all along. If the ground is dug deeply and kept in good heart, plants that have once got established will bear drought for almost any length of time; but things lately planted and that have not time to get hold, must be kept supplied, or their beauty may vanish for half the season. Succulent vegetables, too, which ought to be kept growing quick must have abundance, and, of course, plants in pots must of necessity have sufficient. There are two important points to be attended to in giving water: one is to expose the water to the sun before using it, to render it soft and warm; and the other is to give a thorough soaking at once sufficient to keep the ground moist for a week.

Cuttings of all kinds may now be struck out of doors. Antirrhinums, Phloxes, Pentstemons, Alysaums, Dielytras, &c.; and cuttings of Laurels, Aucubas, and other shrubs must be struck in the shade.

A small *Cucumber bed* may now be made by digging a trench 1 foot deep by 3 feet wide, in a sunny spot well sheltered from the wind, for such a position is of the utmost importance. A thorough collection of all the weeds around the garden, the trimmings of ditch sides, old Ferns, hedge dubbings, &c., blended with a little hot manure, will do well. Keep the manure low, and fill-up the trench as a mound nearly 2 feet above the ground level. Soil it over slightly, and raise deep hillocks where the plants are to be set. Those who cannot get hand-glasses may stretch some sticks or hoops across, and cover-up at night with old mats or cloths. Such, however, should not trust their plants out until another week or fortnight.

It is now high time to think of bedding-out some of the mass flowers, at least such as are least liable to injury from frost, and have undergone a proper hardening process. Much may be done as to display by a judicious arrangement or combination of both colour and figure. As a general principle, our best authorities seem to agree that the various shades of orange and yellow will class well with the various purples and blues. Whites are suitable with the blues, oranges, and reds. White, however, deranges the effect of the yellows, as also the violet shades, whilst the various red or rose-coloured flowers are, as far as colour is concerned, capable of forming a bed for themselves. Every individual bed of a flower garden should, in my opinion, be complete in itself in regard to colour, outline, and arrangement of height.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

*Hardy Fruit Garden.*—On walls, as in the open ground, all sorts of fruit seem to have set well this season, and now that the safety of the crops has been secured, it is absolutely necessary, in order that good fruit may ripen off, that the trees be kept in perfect health. Said an ardent amateur cultivator of fruit the other day, "If I should ever change my residence, and have a new garden, I will have no Peaches or Nectarines on the walls." Of course he could not expect his trees to do well, smothered with aphid in May, and the few leaves that these

parasites leave in a healthy condition at the base of the young growths allowed to be eaten up with red spider later in the season. In the first place, aphids must not be allowed to increase on the trees. Those most liable to be attacked are Peaches, Nectarines, Plums, and Cherries. The trees must be watched, and as soon as there are any signs of the pest they must be destroyed by syringing the trees with water in which soft soap has been dissolved, and some tobacco juice added. This ought to be applied pretty strong, and moderately hot. It is best to ascertain before using the mixture whether it is strong enough to destroy the fly without injuring the leaves; this can readily be done by dipping an infested shoot in the solution, and the result will be apparent in a few hours. Some of our own trees had been neglected for a week or two, and the leaves had to a large extent become curled up, so that it was not possible to reach the insects with the syringe, and it became necessary to go through the tedious operation of hand-washing. The insects on the Plum trees were green, and seem to be more tenacious of life than the black aphids, which yearly attacks the Morello Cherries on the north wall; these were seen in time, and the result has been much more satisfactory. We have also been hand-picking the Apple maggot from the dwarf trees. This insidious enemy seems to be unusually numerous in our neighbourhood this year. We tried dusting the trees with dry lime, but from the kilns, one year, but this did not seem to have any appreciable effect upon them. The best advice it is possible to give is, "Destroy all that is possible now, and during summer pick-off all Apples from the trees that are attacked during summer, and have all those that drop from the trees gathered and destroyed." The thermometer has fallen very low on several occasions during the past week—on four occasions to 30°, the weather having continued cold at the same time. Probably some of the Apple blossoms have suffered, but on inspection it does not appear that any of them have received the least injury.

*Strauberies* in beds are now coming into blossom. The plants are strong and healthy; only one variety has suffered from frost—Amateur, a new sort recently sent out. On looking down the row of this variety the centres of many of the blossoms were black. This variety has not been satisfactory on our light soil; it was the first to be attacked with mildew last season, and many of the fruits were spoiled by it. On the other hand it is one of the most free-bearing sorts we have, and the fruit is of excellent flavour. On heavy soils it may be free from the faults complained of.

#### FORCING HOUSES.

*Vineries*.—In early houses, where the fruit is ripe, the atmosphere should be kept dry, and the ventilators be open front and back all night; air freely in the day. If previous instructions have been attended to, and plenty of water given to the roots at the time the berries began to colour, it will not be necessary to water the roots until all the fruit is cut, unless it is desirable that the Grapes should hang longer than usual, say for three months after they are ripe; to prevent the fruit from shrivelling it will then be necessary to water the roots, using it clear, but not in large quantities. In our early house, where the fruit is colouring, the night temperature is maintained at 65°, with air on at the back of the house; the atmosphere is also kept rather moist. It is astonishing to see gardeners still recommend a very dry atmosphere in vineries as soon as the fruit begins to colour. Can they give a reason for it? If the atmosphere is dry, and, as is oft-times the case when the roots are inside, the border is also dry, the Vines will become unhealthy, the berries small in size, wanting in finish and flavour, and, what is of the utmost importance, the wood will not ripen well for next season. In the best-managed houses that are forced early some of the berries will be shanked, and in the case of shy-setting varieties there are always a few stoneless berries; these ought to be cut out with a pair of scissors. Attention to a few minute details of this kind serves to make a considerable difference in the general appearance of a house of Grapes.

It is necessary to again allude to tying, training, and stopping the growths of Vines in late houses, and to repeat the caution that the young and succulent shoots must not be brought down too fast to the wires, else many will snap. Though it has been cold it was not necessary to have any artificial heat in the houses; but now that the flowers are opening, the Hamburgh and Lady Downe's houses are kept at not less than 65°, nor more than 70° at night. Muscat, Gros Guillaume, and Mrs. Pince's Black Muscat are 5° higher. Many gardeners recommend lowering the temperature. A writer in a contemporary finds his Muscats set as freely as Hamburghs with a night temperature during the flowering period of from 51° to 56°. This is worth knowing, as we never yet found Muscats set as freely as Hamburghs. Another celebrated grower of Muscats told us that he poured water on the bunches daily from the rose of a waterpot during the flowering period. Two of the most celebrated Grape-growers in Britain, Mr. D. Thomson, of Drumlaugh, and Mr. W. Thomson, of Clovenfords, recommend and practise the higher night temperatures, and we never expect to see better Muscats than we have seen under their management. The

other systems may be better, but we have not yet been able to summon courage enough to try them. Do not keep an overdry atmosphere; sprinkle the paths and surface of the borders once or twice daily.

*Peach House*.—There is little can be said about Peaches that are being forced, the treatment required is very similar to that of a vinery. Where the fruit is ripe and ripening it must be looked over daily, carefully gathered, and placed in a flat-bottomed basket on a layer of cotton wadding. The basket should then be conveyed to a cool place. A friend recently told us that Peaches would keep about six weeks if carefully gathered and placed in an ice-house. Many contributors and readers of this Journal have abundant opportunity to try this; would they kindly do so and report the result? [Will they not be flavourless?] Red spider will take advantage of the drier atmosphere and disuse of the syringe. Nothing can be done to destroy it until all the fruit is gathered, when the trees may be deluged by the garden engine. In late houses it is well to thin the fruit in good time. Keep the syringe at work night and morning, and if it is desirable to hasten the ripening of the fruit, shut-up about 4 P.M., earlier or later as the day is cold or hot.

#### PLANT STOVE.

The principal work here has been tying and thinning the growths of climbing plants, and bathing with insect pests. No good plants or flowers can be produced if they are not kept clean. The flowering plants, such as *Ixoras*, *Francisceas*, *Stephanotis* and others of this class are some of them in full beauty, and others are coming on. A very moist and high temperature is not now desirable. Orchids are also much better in a cooler and drier atmosphere when in flower, they will last sometimes two or even three weeks longer in beauty, and, as is very often the case where there is only one house both for growing and flowering the plants, much may be done to prolong the flowers by exercising care in syringing, and not to have an over-moist atmosphere.

#### FLOWER GARDEN.

When the weather is favourable in the second week of May, it is time to commence getting the bedding plants out—that is, if they are in condition—stout healthy plants that have been in the open air at least three or four weeks previously. Begin, of course, with the hardiest plants, *Calceolarias*, *Zonal Pelargoniums*, the plain-leaved section first, to be followed with the variegated varieties; *Lobelias*, *Verbenas*, and *Ageratum*, are all comparatively hardy. Let the lights be removed from all plants in frames in the day at least, and also at night if there is no sign of frost. The ground is not at present in condition for planting-out, being too dry. If rain do not come in a few days it will be necessary to water the ground just before putting the plants out. Most of the plants employed in carpet-bedding are comparatively hardy, and if not planted-out it may be done at once. *Echeveria metallica* may be damaged by rough weather early in May, but *E. secunda* and *E. secunda glauca* are sufficiently hardy, as well as the larger proportion of the *Sedums*. Subtropical plants are best in a position where they can be covered with glass lights until the first week in June.—J. DOUGLAS.

#### PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

MAY.		JUNE.	
Cambridgeshire .....	20	Royal Oxfordshire .....	16
Royal Horticultural of Ireland ..	21	Chertsey .....	17
Manchester .....	22 to 23	Burton-on-Trent .....	17
Southampton .....	25	Thorne .....	17
Blackburn .....	25, 26, and 27	Jersey .....	17
Devon and Exeter .....	29	Guildford .....	17
		York .....	17, 18, and 19
		Fermoy .....	18
Glasgow and West of Scotland ..	3	Nottingham .....	24
Undercliff .....	3	R.H.S. of Ireland .....	25
St. Ansell .....	3 and 4	Cambridgeshire .....	25
Coventry and Warwickshire .....	8	Thetford .....	25
Bath and West of England .....	8 to 12	Ipswich and E. of England ..	25 and 26
Leeds .....	10, 11, and 12	Devon and Exeter (Roses) ..	26
Gloucester and Cheltenham .....	11	Boston .....	30 and July 1

#### TRADE CATALOGUES RECEIVED.

Downie, Laird, & Laing, Stanstead Park, Forest Hill, and 17, South Frederick Street, Edinburgh.—*Descriptive Catalogue of Florists' Flowers, Stove and Greenhouse Plants, &c.*  
T. Bunyard & Sons, Maidstone and Ashford.—*List of Bedding-out Plants, New Roses, &c.*  
James Carter & Co., 237 and 238, High Holborn, London.—*Carter's Select List of Plants for 1874.*  
B. S. Williams, Victoria and Paradise Nurseries, Upper Holloway, London.—*Catalogue of Plants for 1874.*

## TO CORRESPONDENTS

\*. It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

NIGHT-BLOOMING JASMINE (*Crayford*).—We do not think it is known in England.

HOLLY LEAVES DISCOLOURED (*Ramaho*).—You will see the cause stated on page 370 of our last number. The brownish-yellow patches are in consequence of a small grub eating the green parenchyma of the leaf just beneath the leaf's outer skin or cuticle. The grub proceeds from an egg deposited by a very small fly called the Holly-leaf Miner (*Phytomyza Ilicis*). The grub mines under the leaf's cuticle until the time comes for the grub to change to the fly state, when it cuts its way out. There are various other flies of the same genus, and the grubs of which cause similar leaf-disfigurements, but on other plants. *Phytomyza nigricornia* affects *Cinerarias*, *Pansies*, and *Senecios*; and *Phytomyza lateralis* the *Pyrethrum*.

CLEMATIS (*E. L. C.*).—We sent your flower to Mr. Jackman, the best authority, and he says it is a dark-coloured variety of *Clematis patens*, known under the garden name *C. Sophia*. The description given of it in the work called "The Clematis as a Garden Flower," is that it differs from *C. patens* in the sepals being of a deep lilac-purple at the edges, blending gradually into the pale greenish straw colour of the bar which marks the centre of each. The stamens are deep violet." This is one of the earliest varieties of this type, and is far excelled by the modern kinds. The best mode to propagate the Clematis is to graft on to the root of *Clematis Flammula* in the month of April, or else by layers during the summer months.

AREBUTUS FAILING (*An Irish Subscriber*).—In the absence of any particulars we are unable to account for the failure of your *Arbutus*, it being probably occasioned by wetness of soil, that being unsuitable. Sandy loam with a little peat is most suitable, but we have seen them doing well in common soil.

ROSES LEGGY (*Idem*).—It will not do to cut-in the Roses after flowering as they will not probably break from the old wood so late in the season. We should cut them back at the next winter, and to dormant eyes at the base of the plants. They may be cut-in to within 5 or 6 inches of the soil. They will probably start from eyes at the base, but will flower little the following season. Could you not peg the long branches down? It will cause shoots to come from the base, and after a season's growth the long bare branches may be cut away.

DOUBLE FURZE, CUTTING DOWN AND PROPAGATING (*Idem*).—It should be cut-down in March before growth or flowering, but if not so longly that it could be cut-down leaving some green parts at the base, you may cut it down after flowering. It is not a very certain grower from the old wood, and if old it is not unlikely the plants would again grow, as we have more than once experienced. Propagation is effected by cuttings of the ripened shoots of the current year, put-in in September in a shady border in sandy soil, or in spring before growth, selecting the shoots of the previous season.

CUCUMBER AND MELON HOUSE (*Anxious*).—You will not be able to grow both satisfactorily in the same house. Cucumbers requiring more moisture than Melons. We should decide for one or the other. The house will not accommodate more than five plants at 2 feet apart. The border will not need have brick partitions for each plant. Over the pipes you may have rubble, as also around them, and brought-up 8 inches above them, over which place a layer of sods, grass side downwards, and then the soil.

PINCHING APRICOT SHOOTS (*H. G. M.*).—Pinch-in all, except those required for extension, to four leaves, and the foreright shoots to two. Any short stubby shoots that may have four to six leaves should not be stopped, they being so situated as not to crowd the trees, and well disposed for training-in.

STRAWBERRIES AFTER FORCING (*Vicar's Widow*).—Remove the runners as they show, and when the fruiting is past plant them out in rows 2 feet apart, and the plants 18 inches asunder in the rows, making the soil firm around the ball, and watering if the weather be dry. They will give you a good crop next year out-doors. For plants to force next year, layer runners in small pots, not in August, but as early as they can be had, the earlier the better, and when they have filled the small pots with roots detach them from the old plants, and pot into 6-inch pots in good turfy loam, beating the soil firm, standing in an open situation, and keeping well supplied with water.

FRUIT SUCKERS ON PINE-APPLE PLANTS (*Ignorant*).—By the "side shoots" we think you allude to the fruit suckers which are disposed at the base of the crown, which should all be removed by twisting them off, as also any that may issue from the fruit stem, taking care not to injure the latter. Allow one or two suckers from the base of the plant, but not more. Any others may be prevented from growing by thrusting in a triangular-pointed stick and twisting it round a few times, so as to destroy their centres; or if they again grow, the process may be repeated. The present is a good time to propagate Pines, and propagation may be continued up to autumn. The low winter temperature will not injuriously affect the fruiting plants. Your treatment must be very slow and costly, having, as you say, plants four years old.

INSECTS ON GERANIUMS (*Miss Allen*).—There is no insect on the stems and leaves sent us, but traces of thrips, for which you have only to continue the fumigation with tobacco, shutting-up closely on a calm evening, and having the foliage dry but the floor wet, and filling the house so that a plant cannot be seen from the outside through the glass. The cayenne may be omitted, as, though it gives off fumes very offensive to human lungs, we have not found it destructive to insect life.

FERNS IN AIR-TIGHT CASES (*In a Mist*).—We have known Ferns succeed in a close case without air or water for two years, and are not surprised at your having them growing in closely-stoppered bottles for live weeks. The

plants in very close cases, though growing quickly, soon become unhealthy, and eventually die. The kinds you have chosen are the most enduring of Ferns in confinement, with the exception of *Polypodium vulgare*. We do not think it would answer to have Ferns in air-tight cases; we have never seen any in very close cases so flourishing as those in ventilated ones.

CUTTING-IN RHODODENDRON (*M. S. C.*).—Your bush which is making or has made fresh growth ought not to be cut back, as it will not start again this season strongly, or early enough to ripen the shoots before winter; probably it will not make fresh growth this season. It should be cut-in before it begins to grow, and to some extent lower than you wish the plant to be grown to in three or four years, which will cause you to cut into the old wood and have a bare-looking plant for a time, and one that will not flower, or only partially, the year after cutting back. Cutting back the young shoots would not improve matters, as that would only give a smaller plant until the next growths were made, and there would be no flowers. We should only remove any irregularities of growth, and should check its growth by removal now, planting again on the same spot. We presume the plant is outdoors, but if indoors your only remedy is to cut back.

CITRON AND ORANGE TREATMENT (*Orange*).—The plants should be encouraged now and since February with a brisk heat and moisture, they being placed in ainery or other house in March; any pruning required should then be done, also repotting. Continue them there up to July, when, if the roof is very much shaded by the Vines, they should be removed to a house where they will have more light and air, in order to secure the ripening of the wood, on which depends the flowering. Watering during growth should be liberal, but err on the side of dryness rather than of too much moisture. If theinery is moderately light they may be continued there throughout the year. Give a winter temperature of 45°. The part of leaf sent is apparently from *Aspidistra lurida variegata*, which usually requires a greenhouse. In some situations it is hardly.

TEMPERATURE OF OUTSIDE VINE BORDER—WATERING WITH LIQUID MANURE (*Idem*).—The border at 1 foot deep should be as warm as the mean temperature of the atmosphere in which the Vines are growing. If you take the temperature of the house at night, its minimum, and the day, its maximum, for a week, the mean will give you the temperature for the border. 60° will be too low for the border where Muscats are setting, it should be 70°. The liquid of the tank receiving the drainings of the stable, cow shed, &c., will be of too uncertain strength to apply to a Vine border. We should dilute it with at least six times its bulk of water, and apply at a temperature of 70° to 75°.

REMOVING VINE SHOOTS (*H. H.*).—The shoots being too close, you may thin them now that the Vines are in leaf without fear of bleeding or injury. It is a better plan than stopping to one or two leaves and not removing the shoots until the winter pruning. Do it now, cutting them away close to whence they proceed.

PROPAGATING CINCERARIAS (*Idem*).—When done flowering remove from the greenhouse, cut down the old flower stems, and stand out of doors on coal ashes in an open but sheltered situation, giving water as required so as to keep moist; and when the offsets appear, and have two leaves take them off with a knife, preserving the roots, and pot singly in small pots, placing in a cold frame, shading from sun until well established, then admit air and light and shift into larger pots as required.

WEEDS ON LAWNS (*C. Constant Reader*).—Removing them with a knife by the roots is a tedious but effectual process, and we advise its adoption. Or you may use oil of vitriol after removing the coarser weeds. Take a blacking bottle with a wire round it to carry it by, and a stick to dip with, the stick notched round for an inch or two at the end the better to hold the liquid, and one drop placed in the centre of each weed will be sufficient to destroy it. If the acid is good it will burn up the weeds in a moment. Watson's lawn sand is said to destroy Daisies, &c., and is highly spoken of by some who have tried it, but we have no experience of it.

GERANIUMS IN BEDS NOT FLOWERING (*Jane*).—When Geraniums grow strongly and give very few flowers it is owing either to an excess of nutrient in the soil or of moisture in the air—often to both. You can, of course, remedy the evil if the soil is at fault by replacing it with other of a poorer nature. You might also try the effect of plunging the plants in the pots in a bed or two. If after this you fail to obtain more blossom, then you may safely conclude that the climate is the cause of the evil, and the only remedy will be to depend more upon fine-foliated plants, which are so numerous and varied both in form and colour that very beautiful combinations may be wrought out with foliage alone. Depend upon it you are mistaken in regarding salt as a curative; the effect of its application would be additional vigour in the plants rather than the reverse.

SPOTTED GRAPES (*Tyro*).—Water the roots of the Vines copiously with tepid weak liquid manure; they do not supply sufficient sap to the berries. The sun has nothing to do with the disease.

PRIMULA JAPONICA SEEDLING (*D. M. Q.*).—The flower sent, white splashed with pink, and yellow-throated, is quite unique and very pretty. We hope it will be permanent, and that you can raise a stock of it.

PIPING FOR HEATING SPAN-ROOFED HOUSE (*B. A.*).—To maintain in your house a minimum of 40° in all weathers in an exposed situation, you should have two rows of 4-inch pipes all round the house—i.e., a flow and return, which will be about equal to 110 feet of piping. A few feet less would do, but it is better to err on the safe side, and have plenty of piping. A new edition of the "Fruit Manual" is preparing. We do not know of any other work of the same kind.

CUCUMBER ROOTS CLUBBED (*A Young Gardener*).—The root-stem enclosed to us is clubbed, common to the Cucumber and Melon in an old state, but usually on plants in a young condition. There is no remedy; but a brisker bottom heat, with greater moisture of the soil; and weak liquid-manure application, would give you increased root-growth that would, to some extent, prolong the growth and fertility of the plants.

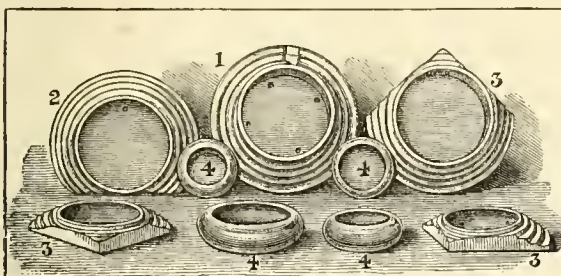
VINE CULTURE IN THE OPEN AIR (*Tyro*).—We would not protect out of doors Vines with netting when in flower, but if the meshes were wide it would do no harm. "Ringing" the wood does interfere with the growth and health of the Vines, and does not increase the size or flavour of the fruit. Stop the growths at the second leaf beyond the fruit.

NAMES OF PLANTS (*T. B.*).—*Pyrra japonica*. (*Uppur Castle*).—1, *Myosotis collina*; 2, *M. arvensis*; 3, *Stellaria media* var.; 4, *Arenaria trinervis*; 5, *Viola Cracca*. (*A Learner*).—1, *Prunus Cerasus* (?); 3, *P. Padus*, or a near ally; 2, *Saxifraga hypnoides* var.; 4, *Teucoma jasmoides* (?); 5, *Chrysanthemum pinnatifidum*; 6, *Davallia bullata*. (*Manchester*).—*Leucothoe axillaris*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

## MR. WOODHOUSE'S NEST PANS AND FEEDING VESSELS FOR PIGEONS.

WHILE the improvement in many varieties of fancy Pigeons and the way in which they have been shown have been great, yet improvements inside their lofts have been very few. The modern show-pens, as seen at Glasgow and the Crystal Palace, as distinguished from the wooden dens of Birmingham, show advance; and I should like to see a good photograph on a large scale of the next Palace Show, as a guide for other shows, and as a proof to those what that Show is. Then the accuracy of feathering, notably in the Satinette; the refinement of form, as in the African Owl; the knowledge of matching which eminent breeders possess, which is in itself quite a science—these things all mark progress in the fancy. But go inside a loft: there is the hopper known and used a hundred years ago, there is the water-bottle slike in plan if not in form, and especially there is the nest pan, just the same as used in the eighteenth century—out of which, it being a sort of miniature hand-basin, if a young bird tumbles, he is hopelessly overboard, for the side slanting outward renders it impossible for him to get back, and death by cold is the result, if not death by starvation also. Now Mr. Woodhouse, of Lynn Regis, has brought out and registered a number of variously shaped pans, but all on one principle, and to which I beg to call attention, as they appear to me to be real substantial benefits and improvements, and which, if used, will save many birds from suffering and death, and thus are humane, while they will be profitable to the fancier by his being able to raise more birds, and we all know how disappointing it is to find a half-fledged bird, often the best, dead outside his nest pan.



Woodhouse's Nest and Feeding Pans.

I have seen specimens of all the nest pans and feeding vessels of which a photograph is given above. First there is that marked No. 1; this pan is somewhat flatter than most that are used, which is right, as Pigeons do not like a deep nest. The material, I would premise, of both nest pans and feeding vessels is rough ware like that used for flower pots. Round what would be in other nest pans the edge are a number of concentric circles like steps, only they are hollowed, and if a Pigeon do get out of his nest he will not fall overboard, but on the first step, and he may manage to scramble back again. From the old class of nest pan a fall means to be hopelessly lost unless a hand is near to help. The nest pan marked 2 has one side cut away, and so will fit close to the wall. But those marked 3 are for corner places, the very places where birds are easiest lost, for once over and in a corner the young one is "lost to sight" though he may be "to memory dear." On the whole I cannot but think that these pans are great improvements.

Next come the feeding pans of various sizes marked 4. The principle upon which they are made is that of the old-fashioned iron pot—narrow at the top, then bulging out. Now, as Pigeons knock the food to right and left with their beaks—and very large and powerful are the beaks of Carriers and Dragons—they constantly scatter the corn and send it over the edge; this they cannot so easily do out of these feeding pans. I should like to see them adopted at all shows, as the saving of food would be great, and the large-wattled birds would be sure to be fed, whereas when food is scattered on the floor they are almost starved. Mr. Woodhouse has benefited the fancy by these two plans of his for nests and feeding.—WILTSHIRE RECTOR.

## HAMBURGH AND PARTRIDGE HENS LAYING IN THE SAME NEST.

Two or three days ago I found one of my Spangled Hamburgs was laying in the orchard. I took four eggs from the nest, leaving one; and the next day I found, as I expected, another

egg, but was much surprised to find a Partridge's egg in as well I took the Hamburg's and left the Partridge's, and to-day there were three eggs of the latter, and the respective layers were contending who should have the nest. Shall I leave two or three of the Hamburg's eggs in? Would the Partridge hatch them? and is not this a very unusual circumstance?—F. P. G.

[The fact you relate is both curious and interesting. We should in your case withdraw the Hamburg and her eggs, and leave the nest to the Partridge.]

## THE POULTRY-KEEPER.—No. 2.

## THE ANATOMY OF THE HEAD.

THE head of the cock, as well as of the hen, is composed of two principal parts—1st, the skull is a firm union of bones, which include the upper part, or mandible, of the beak. 2nd, the lower part, or mandible of the beak, being the lower jaw-bone, formed by a single piece. In the skull are the sockets or cavities which contain the eye; the nostrils are in front of the eye; the auditory organ, or ear, is behind the eye. The head, excepting the beak, is entirely covered by a fleshy covering, round which may be seen several appendages or caruncles, which are the crest, the two earlobes, and the two ear-wattles. This covering forms the cheeks.

The colour, the size, the form of each of these parts is variable, according to the variety, and often serves to characterise each.

A tuft of short feathers, and called "the tuft," covers the auditory organ. The different parts of the head are shown in fig. 5.



Fig. 5.

1, The comb, which surmounts the skull. 2, The wattles, which hang underneath and on each side of the beak. 3, The ear-wattles, which hang under the cheek. 4, The tufts of little feathers which cover and protect the auditory organ. 5, The cheeks, which commence at the beginning of the beak near the nostrils, cover all the face, and re-unite behind the head by a continuation of flesh of the same nature, but covered with feathers. 6, The nostrils, which are at the beginning of the beak. 7, The beak, of which the two parts, the upper and the lower mandible, are horny.

The comb is straight or drooping. It is single when it is composed of only one piece; double when there are two alike united or near together; it is triple when it is formed of two alike and one in the middle; it is frizzled when full of granulations more or less deep, and erect excrescences; it is a crown when it is circular, hollow, and indented; it is goblet-shaped when hollow, vascular, and not indented. There are other forms, but they are composed of parts or unions of those particularised.

## SIGNS OF THE QUALITY OF THE FLESH.

The principal points by which to discern the quality of the flesh in a fowl are the colour of the feet and the kind of skin. The yellow foot generally indicates a fowl with tough flesh, heavy bones, and yellow fat. It is very rare that this colour does not show itself in the skin. However, it does not exclude certain qualities of the flesh in the pure descendants of the two exotic races, Cochins-China and Brahma Pootras.

With the exception of yellow and green, which can never be recommended, all other colours from black to white are equally indications of an excellent flesh. When the skin, and above

all that of the sides and breast, is of a fine tissue, delicate, and easily extended, also having a rosy pearly colour, one may be certain that the flesh is good and will fatten rapidly.

### GREAT HARWOOD SHOW.

This was held on the 7th inst. The entries in the poultry and Pigeon sections were very small, no doubt owing to the Epworth Show taking place on the following day, and the distance between the two places being too great to be easily got over in time for the judging. In *Game* Mr. Brierley won all the prizes easily. There were some fair birds in the *Hamburg* classes, as also in *Cochins*. In *Spanish* Messrs. Furness and Sudall won both prizes with good birds, and the awards in *Brahmas* fell to the lot of Mr. Crabtree, both pens being good; the first in particular was excellent. The winners in *Game Bantam* cocks were very good, stylish and hard in feather, while the prizes in cock and hen *Bantams* were also awarded to Game. In *Rouen Ducks* Mr. Wakefield had capital birds.

Carriers were first in the *Pigeon* classes, Blacks winning both prizes in cocks, but the first award was a mistake, the second being by far the better bird in all respects, and in hens we would have placed the second-prize pen first. Tumblers were well placed, with Almonds first and Kites second; and in *Barbs* Yellows were first and Blacks second. The first in *English Owls* were very spindly in beak, nothing like what is at present required in this class; the second were also Blue. *Dragoons* were good, the right style of head to the fore, the first Blue and second Silver. Although both pairs of *Antwerps* were good, yet we preferred that which obtained the second prize as being shorter and fuller of style. *Jacobins* were poor, but the two pairs of *Pouters* very good. In *Fantails* there was nothing noteworthy. In *Nuns* the first were a neat pair of Yellows and the second Black. There was but one pen in the *Variety* class and these were *Blondinettes*.

(From a Correspondent.)

*Hamburgs*, Gold-pencilled cock and hen (7 entries).—The first-prize pen contained a splendid pullet with a good coloured cock not so neat in head. Second came a fair pen throughout. Pen 215 contained a good pullet, but too light in ground colour. Silver-pencilled cock and hen.—First pen a capital pullet for markings and colour, and a very nice cock; second a good pen; the highly commended pen being about an average pen. Gold-spangled cock and hen.—The first and second-prize pens contained good birds, the first winning by his style and carriage. The highly commended consisted of good birds, but for the cock's comb being so very ugly and coarse. In Silver-spangled cock and hen.—First a good pen throughout; second a showy cock, not so good in ears, and inclined to white face, but a capital hen, which will be heard of again. Highly commended a fair pen, but the hen's spangles not opened out to show to advantage.

In *Cochins*, first came a magnificent pen of Partridge, being the second-prize Palace cock mated with a well-pencilled hen of good shape with plenty of feather and cushion. Second came Buffs, a good hen, but the cock short in depth of breast. A pen of very nice Whites were highly commended.

*GAME*.—1 and 2, C. W. Brierley, Middleton. *hc*, R. Lensdale, Worston. *Clitheroe*. *Cock*.—1 and 2, C. W. Brierley. *hc*, T. Ewbank, Haslingden. *c*, J. Sanderson, Downham, Clitheroe.

*HAMBURGS*.—*Golden-pencilled*.—1, G. & J. Duckworth, Church. 2, J. Rhodes, Accrington. *hc*, W. Clayton, Keighley; W. Wilson, Lower Hippings, Manchester. *Silver-pencilled*.—1 and *hc*, J. Rhodes. 2, J. Robinson, Garstang.

*HAMBURGS*.—*Golden spangled*.—1 and 2, G. & J. Duckworth. *hc*, J. Robinson. *Silver-spangled*.—1, A. Trickett, Waterfoot. 2, J. Robinson. *hc*, H. Stanworth, Worston.

*COCHIN-CHINAS*.—1, T. Aspley, Church. 2, W. H. Crabtree, Levenshulme, Manchester. *hc*, W. Whitworth, Jau, Longsight, Manchester. *c*, H. Yardley, Birmingham.

*DOCKINGS*.—1, J. Stott, Healey. 2, W. H. King, Rochdale. *hc*, W. Watson, Church.

*SPANISH*.—*Black*.—1 and 2, Furness & Sudall, Rawtenstall. *c*, S. W. Hallam, Whitwick, Lancaster.

*BRAHMA*.—1 and 2, W. H. Crabtree. *c*, M. Sommer, Great Harwood.

*ANY OTHER VARIETY*.—1, J. Robinson. 2, W. Wilson. *hc*, W. Whitworth, jun.; T. Marples, Blackburn; T. Mercer, Great Harwood.

*BANTAMS*.—*Game*.—*Cock*.—1, W. & G. Anderton, Accrington. 2, T. Barker, Burnley. *hc*, J. Shackleton, Halifax; T. Whittaker, Haslingden. *Any variety*.

—1 and 2, T. Barker. *hc*, J. Shackleton (2).

*GEES*.—1, J. Harker, Blackburn.

*DUCKS*.—*Aylesbury*.—1, J. Robinson. *Rouen*.—1 and 2, T. Wakefield, Newton-le-Willows. *hc*, A. West, Worsbourn. *Wild*.—1, J. Trickett. 2 and *hc*, H. B. Smith, Broughton, Preston.

*TURKEYS*.—1, J. Astley, Blackburn. 2, P. B. Bury, Church. *hc*, J. Roberts.

### PIGEONS.

*CARRIER*.—*Cock*.—1, T. Charnley, Blackburn. 2, H. Yardley, Birmingham. *hc*, J. Astley; J. Stanley, Blackburn. *Hen*.—1 and 2, J. Stanley. *hc*, J. Hawley, Bradford.

*TUMBLERS*.—1, H. Yardley. 2, T. & W. Oddis, Brierfield, Burnley. *hc*, T. & W. Oddis; T. Charnley.

*BARBS*.—1, H. Yardley. 2, T. Pincock, Preston.

*OWLS*.—*English*.—1, T. & W. Oddis. 2, T. Charnley. *hc*, W. Dugdale, Burnley.

*DRAGONS*.—1, J. Stanley, Blackburn. 2, J. Astley. *hc*, H. Yardley; J. Ashworth (2); J. Astley.

*ANTWERPS*.—1, J. Stanley. 2, J. Crossland, Wakefield. *hc*, H. Yardley.

*JACOBINS*.—1, W. Dugdale. 2, A. A. Vander Meersch. *hc*, W. Dugdale; A. A. Vander Meersch; J. Stanley.

*TURNITS*.—1 and 2, J. B. Bowdon.

*POUTERS*.—1, J. Hawley. 2, H. Yardley.

*FANTAILS*.—1, J. B. Bowdon. 2, J. Richmond, Oswaldtwistle. *hc*, H. Yardley; J. Richmond.

*TROMPETERS*.—1 and 2, A. A. Vander Meersch.

*NUNS*.—1 and *hc*, J. Richmond, Oswaldtwistle. 2, J. B. Bowdon.

*MAGPIES*.—1, J. B. Bowdon. 2, J. Richmond.

*ANY OTHER VARIETY*.—1, H. Yardley.

The Judges were Messrs. S. Fielding and T. J. Charlton, Blenheim Road, Manningham.

### HASLINGDEN POULTRY SHOW.

This Show, which had previously been held in July, took place on the 6th inst in a large field well situated for the purpose. Excepting in the case of Turkeys, Geese, and Ducks the birds were exhibited singly, and the entries showed a high appreciation of this change of the exhibition time, the numbers being such as have not been seen before at any spring meeting in Lancashire; the greatest augmentation being in poultry, these with the Pigeons and Rabbits amounting to about 740.

*Turkeys* were first, and these were in nice feather for the time of year, as also the *Geese*; while the *Aylesbury Ducks*, though good, were somewhat the worse for wear. Of *Rouens* there was a good entry and of high quality. The three winning pens were very large and correct in points. A splendid pair of *Chilian Teal* were first in the *Variety* class, and *White-faced Whistlers* second.

*Cochin* cocks were good, most of the winners being *Lemon*; the first was a large and most exquisitely shaped bird and well feathered. Mr. Taylor won both prizes in hens with grand birds. In the following class both prizetakers were *Partridge*; and in hens the first was a splendid *White*, with an almost equally good *Black* second—the latter, in fact, being the best *Black* hen we have yet seen.

Although the prizes were good, yet where there were large entries some extra prizes were awarded, and this was the case in *Brahma* cocks, where they were well merited, the class being good and the winners in prime condition; but although the hens were very good, some of the best were rather broody, and rough and bruised in tail, and passed over on that account. *Dorking* cocks were but moderate, but the hens were very good, the winners being *Dark Grey*. In *French La Flèche* won in both classes, and these were about the most perfect we have yet seen, and were really handsome fowls. In *Spanish* cocks the first was a large-faced, deep-dropped cock; the second being not so well developed but of nice quality; and the same remarks apply to the hens, the second, however, being a pullet. *Game* as a class were not so good as we have seen here, but some of the winners left little to be desired, the hens in the open class proving superior to the cocks. In *Hamburgs* the competition was very keen, the best of these being the first-prize *Gold-pencilled* cock, the *Silver-pencil*, and the second-prize *Gold-spangle*, which was one of the most perfectly-marked birds that have been shown of late; and in hens all the winners were almost perfect. The first in *Gold-spangled* hens was a gem. *Black Hamburgs* were very good, the colour being grand, although the old fault, a slight tendency to white in the face, showed in some specimens. *Polish* were splendid in both classes, the crest and marking being something to be wondered at. In the *Variety* classes *White Malays* were first, and in cocks a nice *White Minorca* was second. In *Game Bantams* the entries were very good; the single cocks in the *Local* class were *Piles* of good points. There were many good birds in the open class; that which was first being almost perfect in colour and shape, while the second-prize bird was taller but not so good in colour. No other bird, however, stood at all with these. Hens were also very good, there being little choice in the first three, although the first was much the best in colour. *Piles* won both prizes in single cock of any other variety; and in hens a *Pile* was first, a *Duckwing* second. In the next class the winning *Blacks* were of grand quality, as also the hens, although the latter were a little gipsy-faced. In the following class a *Pekin* stood first and *Silver Sebright* second, while in hens *Laced* was first and *Pekin* second.

In *Pigeons* the *Carriers* were good, a grand bird being placed first, and a very long-faced *Black* cock coming second. In *Pouter* cocks a capital *Blue* was placed first, and a *White* second. *English Owls* were poor, and the winners very bad in head and beak. The first in *Fantails* was a most decided mistake; those shown by Mr. Loversidge being by far the best. *Dragoons* were a grand lot, the winners being well placed in all cases; but in *Antwerps* that shown by Mr. Crossland should by all means have stood first. In *Nuns* the Rev. A. G. Brocke won with good birds.

There were some capital *Rabbits*, and the prizes were well placed.

### HAMBURGS.

(From a Correspondent.)

*Golden-pencilled* cocks (9 entries).—The first-prize cock was rightly placed, being good in all respects. Second-prize bird, too light in colour in hackle, and not good in ears. The *v.h.c.* bird was better in all respects excepting his comb.

Golden-pencilled hens (12 entries).—The first-prize bird was far ahead, being good in colour and pencilling. The second-prize bird was good in pencilling but bad in ground colour. There were two or three good birds which had to be content with h.c.

Silver-pencilled cocks (8 entries).—The first-prize cock won easily, being a good bird and well shown. The second bird was also good; his ears not so neat as those of the winner. Pens 470, 472, and 473 were very good.

Silver-pencilled hens (12 entries).—First a grand hen, being good in pencillings and deep in colour. Second a fair bird, but pen 476 and 477 were preferred.

Golden-spangled cock (14 entries).—First a grand cock, being the Northampton cup cock, good in colour and spangling. Second equally good in colour and spangling, losing only by style and carriage. Pen 487, a good cock throughout, but very coarse in comb; 491, a neat bird; 492, good bird, but white in face; 495 and 497, average birds.

Golden-spangled hens (17 entries).—First a nice hen. Second good in spangling, but short of stripings in hackle. Third (503), small in spanglings and not good in colour. 511, a small hen, good in spangling, but light in ground colour in breast, and tail coverts bad colour. Pens 513 and 515 might have been on the prize list.

Silver-spangled cocks (12 entries).—First a well-marked bird and rightly placed. Second, good bird but rather cloudy in tail. Preferred pen 521. 524, a nice bird. 528, a good cock, but ears in very bad condition, and too large in comb.

Silver-spangled hens (10 entries).—First, a large hen, well spangled, but too dark in hackle. Second was a mistake, being much inferior to pen 532 or 536.

Black Hamburgh cocks (12 entries).—First and second-prize cocks good birds in their right places; pen 549 being close on them. The h.c. pens were good cocks.

Black Hamburgh hens (16 entries).—First a grand hen well shown, hard pressed by the second-prize bird, which was a capital hen. The third-prize as well as many of the h.c. birds were worthy of note.

COCHIN-CHINA.—*Buff or Cinnamon*.—Cock.—1, Mrs. E. Allsopp, Worcester. 2, C. Sidgwick, Fyfield, Keighley. 3, R. P. Percival, Northenden, Manchester. 4, W. H. Crabtree, Levenshalme, Manchester. 5, J. O. Ruge, Ulverston. 6, T. Stretch, Ormskirk. 7, C. W. A. Taylor, Manchester (2). Hen.—1 and 2, W. A. Taylor. 3, W. H. Crabtree. 4, R. P. Percival. 5, W. Harvey, Sheffield. 6, H. Feast, Swansea.

COCHIN-CHINA.—*Any other variety*.—Cock.—1, T. Stretch. 2, W. A. Taylor. 3, W. H. Crabtree, jun., Longsight, Manchester. 4, R. P. Percival. 5, C. Carr, Walsden, Bingley. 6, W. Harvey. Hen.—1, W. A. Taylor. 2, W. H. Crabtree. 3, W. Brierley, Midleton. 4, T. W. Derry, Gedyne. 5, E. Siddall, Rawtenstall. 6, W. A. Taylor. 7, W. H. Crabtree, jun. 8, J. W. Brockbank, Kirkstall, Carnforth.

BRAMMAS.—Cock.—1, W. B. Etches, Whitechurch. 2, W. Whiteley, Sheffield. 3, W. A. Taylor. 4, W. H. Crabtree. 5, R. P. Percival. 6, J. Simpson, Rochdale. 7, R. P. Percival. 8, J. Walker, Rochdale. 9, W. H. Crabtree. 10, A. Bamford, Middleton. 11, B. Lacy, Hebdon Bridge. 12, W. H. Crabtree, jun. Hen.—1 and 3, W. H. Crabtree. 2, F. E. Ausdell, Cowley Mount, St. Helen's. 4, W. B. Etches, Whitechurch. 5, R. P. Percival. 6, E. P. Watts, Birmingham. 7, W. A. Taylor. 8, DORRINGS.—Cock.—1, James Walker. 2, J. White, Warley, Northallerton. 3, S. H. Stott, Preston. Hen.—1, L. Pilkington, Widnes, Warrington. 2, James Walker. 3, W. H. King. 4, T. Statter, Staad Hall. 5, J. White, Warley.

FRENCH.—Cock.—1, E. Walton, Horncliffe, Rawtenstall. 2, J. Robinson, Garstang. 3, W. Harvey. 4, C. Whitworth, jun. 5, H. Feast, Swansea. Hen.—1, E. Walton. 2, H. Feast. 3, E. Laxton, Hewton, Amphill, Beds. 4, J. Robinson.

SPANISH.—Black.—Cock.—1 and 2, J. Furness & Sudall, Rawtenstall. 3, Jabez Walker, Staadford, Wolverhampton. Hen.—1, Furness & Sudall. 2, Mrs. E. Allsopp. 3, Jabez Walker. 4, J. Powell, Furness & Sudall. 5, J. Smalley. 6, J. Smalley.

GAME.—Black or Brown Red.—Cock.—1, J. Fortune, Keighley. 2, J. R. Fletcher, Stoneclough, Manchester. 3, C. W. Brierley, Midleton. 4, E. of London, Derby. 5, Miss M. J. Nelson, Cockshaw, Hebden. 6, J. and 2, C. W. Brierley. 7, W. Ormerod. 8, J. F. Fletcher. 9, J. E. Fletcher. 10, T. P. Lyon, Liverpool. 11, Richardson, Loughborough.

GAME.—Any other variety.—Cock.—1, J. F. Walton. 2, E. Winwood, Worcester. 3, W. Ormerod, Walsden. 4, J. W. Brockbank, C. Morris & Wood, Accrington. Hen.—1, J. F. Walton, Rawtenstall. 2, W. Ormerod.

GAME.—Within two miles of Haslingden.—Cock.—1, J. F. Walton. 2, T. Ewbank, Haslingden. Hen.—1 and 2, J. F. Walton.

HAMPTONS.—Gold.—Cock.—1, H. Beldon, Goitcock, Bingley. 2, T. Wrigley, sen., Middleton. 3, G. & J. Duckworth, Church. 4, J. Robinson. 5, J. Robinson, Lindley, Otley. Hen.—1, G. & J. Duckworth. 2, W. Clayton, Keighley. 3, W. Driver, Keighley. 4, H. Beldon. 5, J. Rhodes. 6, G. & J. Duckworth. 7, J. B. Milson. 8, E. Feast.

HAMPTONS.—Silver-pencilled.—Cock.—1, H. Beldon. 2, J. Rhodes. 3, H. Beldon. 4, J. Robinson. 5, E. Walton. Hen.—1, J. Beldon. 2, J. Webster. 3, H. Beldon (2). 4, J. Robinson. 5, J. Webster. 6, E. Walton. 7, W. Wilson.

HAMPTONS.—Golden-spangled.—Cock.—1, G. & J. Duckworth. 2, N. Marlor. 3, H. Beldon. 4, J. Robinson. 5, J. Bowness. Hen.—1, T. Walker, Denton. 2, H. Beldon. 3, T. Dean, Keighley. 4, N. Marlor, Denton. 5, E. Walton, Horncliffe. 6, G. & J. Duckworth (2). 7, J. Robinson. 8, C. Halstead, Fersfield, Bingley. 9, G. & J. Duckworth. 10, J. Robinson.

HAMPTONS.—Silver-spangled.—Cock.—1, J. Fielding, Newchurch. 2, H. Beldon. 3, H. Ashton, Broadbottom, Mottram. 4, J. Robinson. 5, Robinson and Pemberton, Baildon, Leeds. 6, J. Robinson. 7, C. H. Feast. 8, J. Robinson. Hen.—1, Ashton & Booth. 2, Robinson & Pemberton. 3, J. Fielding, Newchurch. 4, H. Beldon. 5, J. Robinson. 6, J. Robinson (2).

HAMPTONS.—Black.—Cock.—1, H. Beldon. 2, W. Wilson, Higher Tippit, Waterfoot. 3, J. Patrick, Sandhole, Stacksteads. 4, H. Beldon. 5, J. Robinson. 6, Robinson & Pemberton. 7, W. Bunn, Dubb, Bingley. 8, N. Marlor, Denton. 9, Ighwood & Co., Limesfield, Bury. Hen.—1, Stott & Booth, Huddley Brook, Bury. 2, N. Marlor. 3, J. Robinson. 4, J. Moore, Wilsden. 5, J. Patrick. 6, H. Beldon. 7, W. Wilson. 8, J. Patrick.

POLANDS.—Cock.—1 and 2, H. Beldon. 3, T. Dean. 4, P. Unsworth. 5, W. A. Taylor. Hen.—1 and 2, H. Beldon. 3, W. A. Taylor (2).

ANY OTHER VARIETY.—Cock.—1, J. F. Walton. 2, S. R. Harris, Cosgarne, St. Day (Mendips). 3, J. Crowe, jun., Wellington. Hen.—1, J. F. Walton. 2, J. B. Lamb (White Swan).

SELLING CLASS.—Not to exceed 2s.—Cock.—1, J. F. Walton. 2, J. Brown, Rawtenstall. 3, E. Smith, Passmans, Rochdale (Dorking). 4, Anderson, Accrington. 5, James Walker. 6, P. Unsworth, Lowton. 7, J. Powell, Bradford

(Black Spanish). 8, Jabez Walker, Staadford. Hen.—1, Jabez Walker. 2, J. Rhodes, Accrington. 3, G. Barnes, Blackburn. 4, J. Hardman, Bacup (Dark Brahma). 5, K. Lord, Rochdale (Black Red Game). 6, Smith, Rochdale (Brown Red Game). 7, C. W. Clayton, Keighley. 8, James Walker. 9, E. Smith (Dorking).

GAME BANTAMS.—Within two miles of Haslingden.—Cock.—1, E. Walton. 2, T. Whittaker, Haslingden. 3, W. E. Tiley, Haslingden. 4, T. Whittaker.

GAME BANTAMS.—Black or Brown Red.—Cock.—1, W. E. Entwistle, Westfield, Bradford. 2, G. Anderson. 3, W. F. Addie, Preston (2). 4, H. W. Gray, Larkington. 5, J. W. Brockbank, Kirkstall. 6, P. Walton. 7, T. Barker, Bury. 8, T. Dickinson, Preston. 9, W. C. Dawson, Litherly. Hen.—1, W. F. Entwistle. 2, W. F. Addie. 3, T. Charles, Rawtenstall. 4, J. R. Fletcher, Stoneclough. 5, J. Shackleton, Haslingden. 6, W. F. Addie. 7, T. Barker.

BANTAMS.—Duckwing or Pile.—Cock.—1, T. Barker. 2, E. Walton. 3, J. Shackleton. 4, W. F. Entwistle. Hen.—1, T. Barker. 2, W. F. Entwistle. 3, E. Smith, Northowram, Halifax. 4, T. Whittaker. 5, Bellingham & Gill.

BANTAMS.—Black or White.—Cock.—1 and 2, R. H. Ashton, Mottram, Manchester. 3, W. H. Robinson, Keighley. 4, J. W. Walker. 5, T. P. Carver, Langthorpe, Boroughbridge. 6, W. H. Shackleton. 7, H. Beldon.

BANTAMS.—Any other variety.—Cock.—1, H. B. Smith, Preston. 2, N. Cook, Chaworth. 3, J. Watts, Birmingham. 4, B. H. Crabtree, Levenshalme, Manchester. Hen.—1, N. Cook. 2, James Walker.

TURKEYS.—1 and 2, James Walker. 3, E. Lord, Bacup. 4, W. B. Etches, Whitechurch.

DUCKS.—1, James Walker. 2, T. Statter, Staad Hall. 3, Aylesbury. 1 and 2, J. Hedges, Aylesbury. 2 and 3, James Walker, Rouen. 1 and 2, T. Wakefield, Galborne, Newton-le-Willows. 3, J. Newton, Sissden, Leeds. 4, James Walker. 5, J. E. Parley, Newton-le-Willows. 6, H. Stott, Preston. 7, Any other variety. 1, W. Bunn, Pudsey, Leeds. 2, H. B. Smith, Brooklands, Broughton, Preston. 3, H. B. Smith. 4, W. Bunn. 5, James Walker. 6, Mrs. Wootton, Mapperley, Nottingham. 7, H. B. Smith.

PIGEONS.

CARRIERS.—Cock.—1, P. R. Spencer, Hereford. 2, H. Yardley, Birmingham. 3, J. Stanley, Blackburn. 4, W. Sefton, Blackburn. Hen.—1, J. Stanley. 2, W. Sefton.

POUTERS.—Cock.—1, W. Harvey, Sheffield. 2, J. Hawley, Gillingham. 3, E. Heath, Blackburn. Hen.—1, J. Hawley. 2, Owen & Pearson, Kettering.

TUMBLERS.—1, H. Yardley. 2 and 3, W. Harvey.

BARBS.—1, W. Harvey. 2, P. R. Spencer, Hereford. 3, J. Stanley.

OWLS.—English.—1, J. I. Rothwell, Stockport. 2, T. B. Townsend, Bowden. 3, R. Brierley, Fishpool, Bury. Foreign.—1 and 2, T. B. Townsend.

FANTAILS.—1, J. Richmond. 2, A. Warburton, Haslingden. 3, J. F. Loveridge, Newark.

TURKEYS.—1, H. Yardley. 2, T. B. Townsend. 3, G. T. Hardman, Rawtenstall.

DRAKONS.—1, Blue or Silver.—1, W. Sefton, Blackburn. 2, G. Booth, Haslingden. 3, H. Yardley (2). 4, W. Sefton. Any other variety.—1 and 2, F. Graham Birkenhead. 3, G. Booth.

TRUMPETERS.—1, W. Harvey. 2, H. Yardley.

JACOBIANS.—1, W. Lamb. 2, W. Dugdale, jun. 3, J. Thompson. 4, T. Charnley, Antwerp. 5, R. Brierley, Fishpool. 6, A. Justice.

BRONCHES.—1, R. Brierley, Fishpool. 2, J. B. Bowden.

NUNS.—1 and 2, Rev. A. G. Brooke, Shrewsbury. 3, J. Richmond.

ANY OTHER VARIETY.—1, W. Harvey. 2, J. B. Bowden (see). 3, H. Yardley. 4, W. Sefton.

ANY VARIETY.—Within two miles of Haslingden.—1 and 2, G. Booth (Carrier). 3, G. Fielding, Haslingden (Black Carrier).

SELLING CLASS.—Not to exceed 30s.—1, R. White (Barbs). 2, P. R. Spencer. 3, J. Bunn, Haslingden (Dragoon).

RABBITS.

LOP-EARED.—Buck.—1, F. Banks, London. 2, J. W. Harling, Burnley. Doe.—1, F. Banks. 2, J. Irving, Blackburn. 3, C. King, St. John's Wood, London.

ANORA.—Buck or Doe.—1, H. Sweetman, Fulford, York. 2, P. C. Stanley, Lismington.

HIMALAYAN.—Buck or Doe.—1, W. Whitworth, jun., Longsight. 2, J. Hallas, Huddersfield. 3, C. G. Mason, Fieldhouse, Rochdale. 4, E. Robinson, Kettering.

SILVER-GRAY.—1, Miss Mortimer, Rudhall, Ross. 2, J. Hallas. 3, E. F. Tsbott, Bradford.

ANY OTHER VARIETY.—Buck or Doe.—1, J. Irving, Blackburn. 2, J. Hallas. 3, H. E. Gilbert, Rugby (Dutch).

SELLING CLASS.—Price not to exceed 10s.—Buck or Doe.—1, C. King, London (Lop-eared). 2, S. Buckley, Ending Healey, Rochdale (Lop-eared). 3, P. Furness, Rawtenstall (Himalayan).

JUDGES.—Poultry: Mr. S. Fielding, Trentham Park; Mr. Hutton, Pudsey, Leeds. Pigeons: Mr. J. Chadwick, Bolton.

Rabbits: Mr. J. Boyle, jun., Blackburn.

## WHARFEDALE POULTRY SHOW.

THE seventy-sixth annual Show of the above Society was held at Otley on the 9th, and proved in all respects a great success. Year by year some small augmentation of the prize list takes place with excellent results, as is seen in the case of Pigeons, which this year numbered 230 entries against about a score only a few years ago. The pens were open both back and front, and as a cold wind blew most of the day, those birds that had been worked the three previous days yielded to a great extent to the influence of the weather, and many winners of the day before were in consequence left out of the list. Poultry had 297 entries, and we do not remember a collection of so high quality shown here before. In Game were some particularly good, and notably the Brown Reds, to a single cock of which the cup was given, and though good in many respects, we must confess a preference for a cock and hen of the same colour and from the same yard. The first in Duckings were a good even pen, the cock, as far as we could judge, sound and hard in feather; while the pair of Piles in the next class were of the right stamp, bold, firm, hard, and good in colour. *Spanish* were a fair lot; the first small, but neat; second good, but the cock's face was out of order; while the third were by far the best, but looked somewhat chilled. Mrs. Allsopp's grand Lemon pen of *Cochins* fairly walked over; the second were White, the hen a gem, and the third Buff. *Brahmas* were also good, but, unfortunately, the pens were rather small for the large varieties. The cup was well awarded here. *Dorkings* were large but somewhat rough; *Polands* such a display as is rarely seen, Golden being placed first, and Silvera second and third. With the exception of two firsts the whole of the *Hamburgh* prizes fell to the lot of Mr. Beldon, the



the second being also Black but younger, the third a handsome yearling Dun cock. The Black cock in pen 231 must have had the beak-ache, for he could not be induced to close his beak. Pouters were a good class, the first and third being Blues, and second Whites. Jacobins were first, second Reds, and third Black, all being good. In Fantails only the first was of high character, but size, carriage, and tail were perfect in this. Turbits were only moderate. Magpies were a nice class, the birds being small and well-marked. A Red was first, Yellow second, and Black third. In Barbs the first was a Dun, second Black, and third Red, the whole class being noteworthy. For Antwerps there was but one class, Short-faces winning first and second, and Long third; the first a Dun, very short, with pearl eyes, and second also very short with red eyes. Dragons were a very good class, and most were noticed; the first, a Blue cock, second Yellow, and third Silver. Some standard birds were shown in the Variety class, a foreign Trumpeter taking first, second a barred Swallow, and third to a pigmy Pouter hen.

Cage Birds were fair in numbers, but the day being cold the Belgian Canaries did not show to advantage, although a second prize in the first, and a first prize in the following class were awarded to that variety. The other winners were Norwich of the Derby type. In Canaries, Green or Variegated, the otherwise best-marked bird shown by Mr. Luke Belk was disqualified for a trimmed wing, although the same exhibitor was second in that class with a capital Buff-marked Yorkshire bird, the first going to a sound-coloured Green. Goldfinches and Linnets were as usual very good, especially the latter, which we seldom see excelled at any show. In the Variety class the first was a capital Cinnamon hen, second a Paroquet, and third a Grey Parrot.

Rabbits were moderate in number. The first in Lops, a Fawn-and-white doe, had ears 22 inches by 4½ inches; those of the second, a Sooty Fawn buck, being 21 by 4½ inches. In the next class, all varieties except Lops were thrown together, the first being a Silver-Grey of the right style of colour and shade, and second a perfectly-marked Tortoiseshell Dutch buck, many others receiving high commendations.

We are sorry to say that most of Mr. Spencer's pens were empty when the birds were judged.

GAME.—Black-breasted and other Reds.—Cock.—Cup and 1, J. Fletcher, Stoneclough, Manchester. 2, Sales & Bentley, Crowle vhc and c, C. Chaloner, Whitwell, Chesterfield. hc, J. Fletcher; H. E. Martin, Fakenham. Hen.—1, Sales & Bentley. 2, H. E. Martin. vhc, J. F. Walton, Rawtenstall, Manchester. hc, S. & W. Sheard, Normanston. J. Fletcher; J. B. Hopworth, Hatfield.

GAME.—Any other variety.—Cock.—1, J. F. Walton. 2, F. Stamford, Doncaster. hc, J. Andrew, Worcester; E. Winwood, Worcester; J. Wright, Retford. Hen.—1, C. Travis, Thurgoland, Sheffield. 2, J. A. & H. H. Staveley, Selthorpe, Driffield. hc, J. F. Walton; Sales & Bentley.

DORKINGS.—1, R. Cheesman, Westwell, Ashford. 2, S. Brierley, Ending, Rochdale. vhc, W. Morritt, Gosle. c, W. H. Young, Driffield; W. Ross, jun. c, W. H. Newnott, Epworth. 2, W. Nottage, Northampton. hc, Mrs. E. Alsopp, Worcester, and Horford.

BAHAMAS.—Light or Dark.—1, and hc, W. H. Crabtree, Manchester. 2, J. F. Smith, Sheffield. c, G. W. Hibbert, Hyde, Manchester; J. Watts, Birmingham; J. Holmes, Chesterfield.

COCHINS.—1, J. White, Netherton, Wakefield. 2, S. R. Harris, St. Day. vhc, Mrs. E. Alsopp. hc, W. Whitworth, jun., Manchester; W. H. Crabtree, jun.; W. A. Barnall, Southwell; G. F. Bentley, Cambridge.

EXHIBITORS.—1, H. Beldon. 2, E. Walton. 3, P. Hanson, Stou-house. c, J. Ward, Ashby-de-la-Zouch; Mrs. C. Newton, Epworth. Gold or Silver-pencilled.—1, H. Beldon. 2, E. Walton, Rawtenstall, Manchester. hc, R. Newbitt, c, J. Smith, Lincoln.

POULTRY.—Cup and 1, H. Beldon. 2, A. & W. H. Silvester, Sheffield. hc, G. W. Boothby, Louth.

ANY OTHER VARIETY.—1, J. F. Walton (White Malay). 2, H. Beldon. hc, W. Walworth, jun.; W. A. Barnall; Mrs. Ross, Bridge-Croft, W. Harvey. ANY VARIETY EXCEPT GAME.—Cock.—1, H. Beldon. 2, E. Walton. hc, W. A. Barnall; J. Jackson, Loughborough. Hen.—1, J. Powell. 2, E. Walton. hc, Wells and Taylor, Winterton; Mrs. R. Newbitt; H. Beldon.

GAME BANTAMS.—Black-breasted and other Reds.—1, W. G. Waters, Elsham, Brigg. 2, Hon. Mrs. Paget, Hoxne, Scle. hc, H. Dackering, Kirkton-Lindsey; C. Heppenstall, Newark. c, E. Walton. Any other Variety.—1, J. R. F. Fisher, Stoneclough, Manchester. 2, Master H. H. Newbitt, Epworth. hc, E. Walton. BANTAMS.—Black.—Cup, 1, and 2, R. H. Ashton, Matram, Manchester. hc, E. Walton. c, W. W. Taylor, Lincoln; C. Caldicott, Gainsborough; A. & T. Wells, Ripon. Any other variety.—1, J. Watts. 2, B. H. Crabtree, Manchester.

BANTAMS.—Any variety.—Cock.—1, Mrs. E. Newbitt, Epworth. 2, R. H. Ashton. 3, T. W. Adams, Clapham. c, E. Walton. hc, J. Smith, Sunderland. c, Master H. H. Newbitt. Hen.—1 and 2, Mrs. E. Newbitt. 3, R. H. Ashton. hc, J. G. Tonge, Epworth; E. Dawson, Epworth. c, Wells & Taylor.

SILVER-GREYS.—1, F. Stamford. 2, S. Brierley. vhc, R. Newbitt; J. Powell. hc, W. A. Barnall; E. Newbitt.

DUCAS.—Aylesbury or Rouen.—1, J. White. 2, S. R. Harris. hc, W. G. Waters; G. W. Hibbert; W. Brant, Barrow, Ulchey. Any other variety.—1 and 2, W. Binns, Pudsey, Leeds.

#### PIGEONS.

CANARIES.—1, H. Yardley, Birmingham. 2 and c, Miss F. Seanoor, Leeds. 3, W. Seaton, Blackburn, W. Harvey.

POULTRY.—1 and 3, W. Harvey. 2, W. Nottage. hc, A. Spencer, Driffield (2); W. Nottage; W. Harvey.

NOTABLES.—Cup and 1, H. Yardley. 2 and hc, W. Harvey. 3, G. Gardner. Jacobins.—1, R. G. Sanders, Beverley. 2, W. Harvey. 3 and hc, A. A. Vander Meersch, London.

FANTAILS.—1 and 2, J. F. Loversidge, Newark. 3 and hc, W. H. Tomlinson. Barbs.—1, A. A. Vander Meersch. 2, J. Watts. 3, C. E. Horsfall, Liverpool. hc, W. Seaton.

MAGPIES.—1 and hc, Miss F. Seanoor. 2, M. Ord. 3, A. A. Vander Meersch. Barbs.—1 and 2, W. Harvey. 3 and c, Miss F. Seanoor. hc, C. Wraot, Hull; H. Yardley; W. Harvey.

ANTWERPS.—1, J. Crossland, Wakefield. 2, J. Watts. 3, W. Seaton. hc, J. Gardner; H. Yardley.

DORKINGS.—1, W. Seaton. 2, W. Smith, Walton, Liverpool; W. Harvey. 3, W. Smith. hc, W. Seaton; J. Gardner; H. Yardley (2); A. Bentley, London. c, J. Watts.

ANY OTHER VARIETY.—1, W. Harvey. 2, W. Seaton; M. Ord. 3, Miss F. Seanoor. vhc, W. Seaton; W. Harvey. hc, A. & W. H. Silvester; J. C. Elwis, Doncaster; J. Watts; H. Yardley.

SELLING CLASS.—Single Bird.—1 and hc, R. G. Sanders. 2, A. A. Vander Meersch. c, J. Watts.

#### CAGE BIRDS.

CANARIES.—Yellow.—1, J. Baxson, Derby. 2, G. Yates, Thorne. vhc, L. Belk, Dewsbury. hc, T. Green, Gainsborough. c, B. Hanson, Thorne; L. Belk; T. Green. Buff.—1, G. Yates. 2 and vhc, J. Baxson. hc and c, L. Belk. Green or Variegated.—1, T. Green. 2, L. Belk. c, D. Salisbury, Epworth; L. Belk.

GOLDFINCH.—1, L. Belk. 2, G. Yates. hc, D. Salisbury; T. Green; J. Boyes, Epworth; Mrs. Wainwright; J. Baxson.

LINNETS.—1, Mrs. J. Curtis, Epworth. 2, T. Kirk, Burnham. vhc, W. Balmforth, Epworth.

ANY OTHER VARIETY.—1, J. Baxson (Buff Cinnamon). 2, Master F. Allen, Thorne (Paroquet). 3, D. Salisbury. hc, W. Tempterton, Burnham; L. Belk; T. Green; J. Baxson (Tongue-marked Cinnamon). c, L. Belk; R. Barber, Grimsby; T. Green.

#### RABBITS.

LOP-EARS.—1, W. Allison, Sheffield. 2, F. R. Edwardson, Liverpool. hc, T. Garner, Kingsthorpe, Northampton.

ANY OTHER BREED.—1, J. H. Brand, Barton-on-Humber. 2, F. Sabbage, Northampton. vhc, R. H. Glew, Wakefield. hc, S. Brierley (Angora); W. H. Tomlinson (Himalayan); Owen & Pearson, Kettering, Northampton; W. Donkin, Driffield. c, Owen & Pearson; T. Garner.

CATS.—Any Breed or Kind.—1, H. Dundas, Epworth. 2, T. Steel, Epworth (Angora). hc, Miss Capes, Epworth (Persian); Miss E. Wells, Epworth.

JUDGE.—Mr. E. Hutton, Pudsey, Leeds.

## THE QUEEN BEE.

HAVING a unicorn have containing four Woodbury bar-frames surrounded by glass, except the bottom, ends, and top, and the space between the combs and glass being only half an inch, I can see the queen on all occasions, and I will detail what I have seen; and as my observations differ, in some respects from those of both Mr. Lowe and Mr. Pettigrew, they may be interesting to some of your readers.

Having broken-up a ten-bar Woodbury hive, I placed four bars well filled with brood in the unicorn hive along with the queen and bees, set it on a table at a bedroom window with a south exposure, made a hole for the exit of the bees by raising the sash a little, thus having an opportunity of examining them on all occasions. The first season I was extremely fortunate in observing the queen lay an egg in a queen cell. I first saw her come out of the cell and go out on her marriage trip, then saw her arrive home again and commence laying eggs. I will endeavour to describe in as few words as possible all that took place in the proceedings of her majesty.

As the space got covered in the hive the bees formed three queen cells, two on one side of the comb and one on the other, the queen frequently examining the three cells, but always passing on, till one day I saw her make a more careful scrutiny of one of the cells. She left it, remaining five minutes near it, while some of the bees fed her. She then returned, examined it again, and deposited an egg—at least I imagined so, as she went through all the movements she usually does when laying them in worker cells. After that the cell was never at any time left without a bee in it; no sooner was one out than another was in. On the eighth day the cell was sealed-up, on the ninth the old queen went off with a swarm, and on the fourteenth day the young princess ate herself out of the cell.

On the eighteenth day I saw her go out at half-past one, and remain twenty minutes, then come in with all the appearance of a successful matrimonial trip, and on the twenty-first day she was laying eggs. Thus my observations coincide with those of Mr. Pettigrew, and differ from Mr. Lowe, as to the time it takes to rear a queen; though I have no doubt that, like bee-hatching, it may take longer on some occasions (such as cold), than others; as, like Mr. Lowe, I have seen the working bee hatched in twenty days, and have also seen them not able to eat themselves out till the twenty-fifth day, so there may be times when the queen is not hatched till the sixteenth day. This being the only one I have seen, and having watched the whole process, there can be no mistake about it.

Previous to the young princess going out on her marriage tour, the bees paid no more attention to her than to an ordinary bee. She went about the hive, even looking into the cells where other two princesses were maturing; but as soon as she returned the bees could not make enough of her, feeling her all over, cleaning and feeding her, and in twenty minutes after she went direct to one of the princesses' cells which was sealed-up, broke a small hole on the top, and, as I suspect from what followed, killed the princess, left it, went to the other side of the comb and killed the other one which was not sealed-up, and in forty minutes after (though I feel loth to tell the tale, as it gives the bees a character I never would have conceived of them; but the truth must be told, that they are cannibals), they actually ate-up both of the young princesses. The one had the form of the bee but white, the other was a large grub, but both were consumed by the bees. This could be distinctly seen with the naked eye, though I had a microscope at the same time. My observations agree with Mr. Lowe as to the way the bees form a queen—that is, from a worker bee, and that they do not put an egg into a queen cell when they want to rear a queen. When I was in the habit of rearing artificial queens, I used to pierce a hole half an inch in diameter through among the cells which had new-laid eggs, and invariably there would be begun two and sometimes three queen cells, adjoining where those

holes were made, even though there were queen cells formed in other parts of the hive.

I am well aware that the queen frequently lays two and three eggs in a cell, but I have never seen a bee with one in its mouth, and I believe with Mr. Lowe that they eat them, and instead of the bees following the queen to pick them up they are more intent on feeding her; and it is an error to say that there are always four or six bees following a queen. They do not follow, but as the queen passes along every bee turns its head towards her and feels her, ready to feed her if she wants. I have never seen her take honey from the cells herself, she is always fed by the bees.

I have seen the queen lay seven eggs in a minute, but not often. Three in a minute are about as many as she can lay at the very height of the season, and even then she takes a rest of from ten to fifteen minutes, often longer; but she continues laying night and day with the exception of these intervals. The queen I have at present in the unicomb hive has not been laying one egg in ten minutes, but as it gets warmer she will be laying oftener. I find it is a universal belief, which must have been propagated by apiarists, that bees will not work if they are exposed to the light: there never was a greater error, as mine are exposed at all times to the light, and they go on as if in the dark, paying no attention to anyone looking at them, and do not darken the glass to prevent their being seen, as is generally believed.

After the queen and swarm had left the hive, and before the young queen was out of the cell, having a spare queen which was laying eggs I introduced her to the unicomb hive to see if they would accept her instead of waiting for one of their own rearing. As soon as she got in, the greatest uproar took place with the bees throughout the hive. Every one seemed to know instantly that there was something wrong. They at once surrounded her, jamming her up between the combs and glass so that she could not move, and there suffocated her. It was fully an hour before they left her, when they carried her dead body to the door.

I have not the least idea why it is that the queen is reared in a cell hanging nearly perpendicular, with the head undermost, while the working bees and drones are reared in a horizontal cell; and the queen grub is enveloped in royal jelly, which has the appearance of boiled sago, and is sweet to the taste, while that of the working bees is of a greenish yellow colour and has a bitter taste. The queen grub is sealed up with abundance of the royal jelly, in fact she lies embedded in it, while the working bees and drones have a very small quantity, if any, when sealed. The queen, working bees, and drones all eat themselves out of the cells without any assistance from the other bees.

As the queen whose history I have given had not bees enough to make a second swarm she never gave the usual warning for a second, so that I cannot say in what state the queens are when they make their peculiar calls before swarming.—A. SHEARER, *Yester, Haddington.*

## OUR LETTER BOX.

**DEAD HEN (S. D. S.).**—The breast, leg, and liver were necroted. No treatment could have saved the bird.

**BARTON-ON-HUMBER SHOW.**—In reply to Mr. F. Bankes' inquiry in this day's Journal, page 376, I beg to say that I have made a number of applications for prize money, but all have been without reply. I am now determined to put the matter in the hands of my solicitor, and shall carry the matter out to its utmost as a caution for other shows.—A. A. VANDER MEERSCH, *The Walnuts, Tooting.*

**DORKING COCK PROSTRATED (E. J. K.).**—He is suffering from disease of the windpipe and lungs, we fear with little chance of recovery. Your diet and treatment are good provided the action of the gizzard and bowels is free; if not, give copious doses of castor oil, and confine the food to bread and ale and bread and milk.

**TESTING THE VITALITY OF EGGS (J. L. W.).**—We will tell you the way in which we and many others try eggs, in some instances by the thousand. After five or more days' incubation choose a sunny day; get into a dark place such as an outhouse without window, open the door a little to admit a strong ray of light; take the egg in the left hand, and form a telescope with both, the right hand being nearest to the face. You must look close to the hand, and look at the sun through the egg. If life has begun there will be a dark streak plainly visible in the egg. You need not look for any defined form, but simply for that change which betokens the beginning of life. This can be so fully depended upon that many, especially among Pheasant-rearers, try the eggs from under three hens in this way; by discarding the unfertile ones they put two heats of good eggs under two hens, and supply the third with an entirely fresh nest.

**CROOKED CROPS (Rob Roy).**—We do not understand what you mean by "crooked crops." We know no such complaint. If you mean pendent crops, when they hang down in an unnatural manner, the only cure for it is to feed on hard food, and to allow only water enough to satisfy necessity. It is very difficult to treat chickens medically, and we believe if only two or three are affected it will be better to let them take their chance.

**FOWLS FEATHERLESS (F. C. H. and H. T.).**—We take it for granted your fowls are in confinement. We have never known birds at liberty to pick each other's feathers. In our experience, the habit is confined to the Spanish and the Houdans. Some years past a pen of Crève-Cœur vaxed us with the same habit. We have never known Dorkings or Brahmas do it. There is no cure. The evil may be lessened by giving plenty of green food, especially lettuce and grass cut with lots of fresh earth and mould, also by giving fresh horse dung. We believe it arises from the fact they lack something they get when at liberty; the consequence is an excited and unnatural appetite, which they

seek to appease by eating each other. There is one consolation—it is only at this season of the year they are subject to it. After their moult they will be rational fowls till next April. Eat your eggs and forget the fowls. If, however, only two or three are feather-cannibals, separate them from the others. You need not be annoyed if the hens have bare backs and broken feathers, there is often a natural cause for it.

**FOWLS FOR LAYING (J. M. F.).**—You have nearly all that is necessary. All the breeds you mention (Brahmas, Houdans, Crève-Cœur) are good layers. The Brahmas is one of the most useful fowls we have. Houdans and Crève-Cœur are both good layers. It is easy to imagine how we should like to have fowls that laid all the year round, but such remain in the class "a desiderata." To insure winter layers you must have relays of pullets. You should keep some hatched last month, some of this month, and some of next. It is not the property of any breed to lay in the winter, but if there be one it is the Crève-Cœur.

**COLOUR OF EGGS (J. C. A.).**—There is no rule about the colour of eggs, but we do not recollect in our experience ever having seen a dark egg from a Spanish hen. We have seen white eggs commonly from Ducks. We have known a Cochin hen lay an egg on one day almost white, and on the following day one almost chocolate. Again, Dorkings commonly lay cream-coloured eggs. Game do the same. All our Eastern fowls lay dark and thick-shelled eggs; but sometimes, from causes beyond our ken, they will for days lay slight and nearly white eggs. It is said by many, and we are not disposed to treat their theory lightly, that the shades of colour in an egg are influenced by temperature. We should not doubt the purity of the birds, and should not hesitate to set their eggs.

**UNPRODUCTIVE EGGS (Snuff Box).**—"There is something rotten in the state of Denmark." Eight chickens from 156 eggs! "All this sack to a pennyworth of bread." You cannot expect to hatch chickens if you allow the hens to sit where the others lay. There is nothing a laying hen likes so much as to deposit her eggs in a sitting hen's nest. They then come off at different times, one at a time, and die for want of attention. You must take your eggs and put them under a broody hen, putting her in a box or a basket with a sod of grass for the bottom, and a little straw or hay at top. Put the eggs on this, shut down the lid if there is one. If there is not, cover the top so that the hen cannot get out. She must be in some place where no other fowl has access. For nine or ten days before hatching moisten the eggs well while the hen is off feeding, and your bad luck will cease.

**REARING YOUNG DUCKS (C. H.).**—The best food for young Ducks is oatmeal. If they are hatched under a hen you may let them be at liberty with her, providing them with oatmeal mixed with water in a plate. If there is water they (to the hen's great discomfort) will dabble about on the edge of it and find some food. If hatched under a Duck the safest plan is to confine them for a fortnight in some old place such as a pigsty, where the faulty paving or earth allows of puddles. They must be fed here in the same way. The objection to a Duck being at liberty with her brood is, she drags them about towards evening when the flies are about, she takes them under beetling banks, and often leaves some behind. Where there is only a small and open pond, the Duck may be safely left at liberty with her brood.

**CAUSE OF ROUP (Idem).**—Roup is in some instances the result of cold and chill. In others it is caused by insufficient food, often by bad lodging, very frequently by dirt, at times by long confinement in small places, and rarely it is brought about by degeneracy and want of constitution.

**PETTIGREW'S HIVES (P. E. H.).**—Pettigrew's hives have straw lids on their crown-holes; but in the absence of these, pieces of wood of any kind an inch thick will do as well. Mr. Pettigrew covers his hives with pieces of old carpet, cocoa matting, or any materials he can find at hand, and places over these roofing felt. This felt when first used is rather stiff and hard, and therefore should be softened by holding it before a fire, and speedily fitting it on when soft. It costs only a penny a foot, and is better for the purpose of covering hives after three years' use than at first. How long it will last, it is impossible to say.

**FEEDING STRONG STOCKS (W. E. M.).**—Your two strong stocks of bees, being 45 lbs. and 35 lbs. respectively, need no more feeding. The small weak one may be fed occasionally if the weather be cold or rainy.

**BEES NOT WORKING IN A SUPER (C. H.).**—Leave your super on if your stock is populous. The bees will take to it with greater zeal when the warm weather returns. But if your stock is poor in numbers the large vacant space overhead will tend to refrigerate the hive below. In this case remove the super at once, and replace it only when the bees show signs of inconvenience by crowding the entrance. Very hot weather is coming.

**DOG (J. P., Croydon).**—Not knowing the breed or size we cannot advise positively. Washing with soft soap, and a dessert-spoonful of flowers of sulphur twice a week would probably cure him.

## METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barom. temp. and Wind and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 ft. b.	Shade Tem- perature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
May.										
We. 6	29.846	50.3	44.8	N.W.	50.7	58.6	40.4	86	38.8	—
Th. 7	29.688	50.3	44.4	W.	50.2	61.2	33.4	111.3	37.9	—
Fri. 8	29.649	44.5	41.7	N.W.	50.8	56.6	33.8	103.1	36.1	0.024
Sat. 9	29.649	45.9	40.6	N.W.	49.4	53.4	33.8	109.2	28.8	—
Sun. 10	29.842	49.0	42.2	N.	49.5	55.8	33.8	102.7	32.6	—
Mo. 11	30.478	49.1	43.2	N.W.	49.4	58.8	35.4	114.9	28.0	0.025
Tu. 12	30.194	50.6	44.2	N.	49.5	57.8	36.8	96.6	31.8	0.028
Means	29.855	48.6	43.0		49.9	57.2	36.7	103.5	33.6	0.077

## REMARKS.

6th.—A fine day, though very dark and stormlike between 3 and 4 p.m.

7th.—Fine morning, the day rather cold, but with the exception of a slight shower about 5 p.m. it was fine throughout.

8th.—Rather dull morning, and a very slight thunderstorm here at 1.40 p.m. which appeared to be much heavier to the south of this place, and about 4 p.m. there was a shower as if there were another storm some where near.—G. J. SIMONS

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	MAY 21—27, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.		m. h.	m. h.	m. h.	m. h.			
21	TH	Meeting of Royal Society, 8.30 P.M.	66.3	44.7	55.5	19	2 44	51 47	56 8	56 0	6	3 41	141
22	F	Oxford Term ends.	65.4	42.4	53.9	19	1 4	52 7	12 10	20 1	7	3 37	142
23	S		67.3	43.6	55.5	15	59 3	54 7	25 11	36 1	7	3 32	143
24	SCN	WHIT SUNDAY.	67.4	43.0	55.2	12	58 3	55 7	after.	50 1	9	3 27	144
25	M	Bank Holiday.	65.4	42.9	54.2	16	57 8	56 7	47 1	1 2	10	3 22	145
26	TU	WHIT TUESDAY.	67.4	42.8	55.1	19	56 3	57 7	55 2	11 2	11	3 16	146
27	W	Royal Horticultural Society, Fruit, Floral, [and General Meeting.	66.5	44.7	55.5	22	55 3	59 7	5 4	22 2	12	3 9	147

From observations taken near London during forty-three years, the average day temperature of the week is 65.5°; and its night temperature 43.4°. The greatest heat was 89°, on the 22nd, 1817; and the lowest cold 25°, on the 23rd and 24th, 1867. The greatest fall of rain was 0.57 inch.

## WHAT IS REPOSE?—No. 1.



THE importance of repose in gardenesque scenery has very frequently been enforced in the pages of the Journal, but I do not think any attempt has been made to explain the meaning of the term in its technical sense. One or two short papers on the subject may therefore prove useful just now, when special attention is being given to the effects of combinations of colour.

When repose is spoken of in connection with natural scenery, or any work of art, it assumes an importance and fulness of meaning of far greater moment than when it is taken in its primary and simple sense of rest. It is true that it implies rest in whatever sense it is taken, and its meaning here might be explained as rest for the eyes; it does, in fact, imply this and very much more—delicacy of colouring, tasteful combinations, quietness and softness of tone, the prevalence of harmony in an entire scene, and not simply in part of it; or, in other words, unity of expression, an absence of glare, harsh contrast, or any incongruous feature—in a word, it is that subtle principle pervading every object of beauty, the influence of which is felt—often insensibly it may be—by everyone possessing a cultivated and refined taste.

Experience proves that a mere statement of general principles, however plain or truthful it may be, is of very little use alone, and in proceeding to explain the application of those principles in actual practice, I will take one of numerous examples of badly-arranged flower beds by way of illustration.

"K. S." has in his garden a little square-shaped plot of ground, surrounded by a walk, and enclosed on three sides by a building and walls, being just one of those snug little nooks which in skilful hands contribute so materially to render a garden interesting as well as beautiful. It was proposed to fill this bed with a number of small diamond-shaped masses of scarlet, blue, and pink, marking the outlines of the diamonds with grey. Now, had this arrangement been followed it would have resulted in such an effect as has no counterpart in nature—a gigantic gaudy chessboard, a harlequin's dress, a flock of sheep each with its wool dyed of a different hue to its fellows, are the most suitable comparisons that occur to one. So much subdivision would be quite certain to prove unsatisfactory; vainly would the eye wander over the chequered surface in search of any pleasant spot whereon to rest, the monotonous repetition would utterly preclude such enjoyment; a passing glance would be about all the notice it would ever receive. There must be a certain breadth or expanse, as well as harmonious blending in colour combinations, and the error in this instance was probably owing to ignorance of this important fact. Such a large bed, having only a narrow Box edging between it and the walk, requires greater care in the arrangement of the plants than if it were surrounded by a broad belt of turf, because the turf, besides forming an admirable foil to the brightest masses of colour, con-

tributes so materially to impart an air of repose. It must, however, never be forgotten that the turf only constitutes the framework of the picture, and that the colours must be tastefully blended in order to render the combination really enjoyable—that is to say, repose must prevail in the bed itself as well as in its surroundings. Let it not be supposed that I would advocate a tame insipid style of colouring, far from it. Fill such a bed as I have described with a bold central mass of deep rich scarlet, surrounded by a broad band of soft grey; then bring around another equally broad band of deep blue, repeating the grey in a narrower outside belt, and the effect would be bright and sparkling, and yet not lack repose; or plant the entire bed with that glorious Clematis Jackmanni, leaving space only for a broad enclosing band of Mesembryanthemum cordifolium variegatum, and you have an effect of unsurpassed richness and beauty, still with a just measure of repose. It is impossible for anyone not having seen such a bed of this Clematis to form any conception of its rare loveliness when managed thus.

Another beautiful arrangement might be made by taking the grey-leaved Centaurea Clementei for the centre, with the deep pink Geranium Amaranth surrounding it, and a deep purple Heliotrope outside. Then, too, we might venture upon a more intricate style by introducing a broad band of embroidery, formed of Sedums, Echeverias, Sempervivums, Saxifragas, with Alternantheras, Golden Pyrethrum, or the new Golden Stellaria, and Santolinas around a central mass of one colour, such as a soft rose or pink Geranium; or if it were desirable to somewhat break up the centre, by way of variety a clearly-defined scroll may very easily be interwoven upon a groundwork of another colour.

These few examples will, I think, be sufficient to show that a plane surface, whatever may be its outline, affords full scope for the formation of an almost endless variety of such combinations, which will generally prove successful if one colour predominates—not in insignificant patches, but in a broad mass, sufficiently to impart its peculiar tone to the entire bed. It may be well to add a word of caution to beginners, and that is never to indulge in what may be termed a speculative style of colouring. For instance, do not suppose, because a large mass of purple Clematis looks well in a somewhat confined space, that so much of any bolder colour would be admissible. I allude to this because it is just the point where failures so often occur. We have only to remedy this error, striving for an interesting rather than a striking effect, and we shall, I doubt not, have the gratification of seeing more than a passing glance bestowed upon that which has cost us so much care and labour.—EDWARD LUCKHURST.

## OMPHALODES VERNA CULTURE.

THE frequent inquiries about this plant induce me to make a few remarks respecting it; and I am the more inclined to do so because I delight to find that those who are fond of flowers begin to learn that numbers of old-fashioned plants possess many good qualities, and if

among these there are those wanting in the glowing colours of the new ones, the majority are equal to, if they do not excel, the latter in innocence and beauty.

*Omphalodes verna*, or Venus's Navelwort, has been introduced into this country over two hundred years, and is one of those lovely flowers which, if seen in perfection, is not easily forgotten. It is a hardy herbaceous perennial; its leaves resemble those of the Violet in shape, but I think have a rougher surface, and are larger. Its flowers resemble those of a Forget-me-not, but are of a much brighter colour; they are produced in loose spikes just above the light green foliage during March and April. The whole plant when in flower does not exceed 6 inches in height, and is therefore easily overgrown by other more vigorous plants, which may account for its dwindling almost out of existence in many places where there was once a good stock. Such, I may say, was the case at this place (Vinters), but I found one small plant with a flower on it twelve months ago nestled in between two rocks nearly overgrown with Ivy, and where the crumbling dust from the rocks appeared to be the only means by which it existed. A little light earth scattered round it induced it to root more freely, and after it had done flowering the foliage grew vigorously; it ripened-off eight buds or crowns, and these were divided and planted on the shady side of a wall on a dry bank, and afterwards transferred to the rookery, which I consider is the plant's most appropriate place. There it has flowered well, and in due time I shall divide the plants again, and continue in this way until I obtain a good stock.

The plant delights in partial shade and a light well-drained or shallow soil, such as leaf mould and loam. When placed in the recesses of rockwork, take care that the rain do not wash any of the earth from its roots; nor must we allow the roots of other plants to penetrate that particular spot, though the branches may overhang a little, but not so much as to obstruct the light if they do the sun. The plant will also thrive under the shade of trees and shrubs provided the soil is light and dry. I have heard of its being used for spring-garden beds, and should like to learn from those who have tried it how it answers.—THOMAS RECORD.

### AURICULA CULTURE.

DURING the last ten years I have read with great pleasure the articles on this flower in THE JOURNAL OF HORTICULTURE by "D., Deal." I have turned over the old volumes, and read and re-read them; they contain a fund of practical information of the utmost value to the cultivator. Equally welcome have been the lucid articles by the Rev. F. D. Horner. His report of the National Auricula Show at Manchester last year was of great value, as he gave the names of the best flowers in the different classes, so that growers know what to purchase. I have been anxiously looking for his promised report for this season.

Not only the Auricula, but many more of the beautiful and interesting old florists' flowers are still sadly neglected. It will always be necessary to grow "bedding" plants; but if a little of the attention which is at present bestowed on Zonals, shrubby Calceolarias, &c. were devoted to Auriculas, Picotees, Carnations, and Pinks, it would be much more satisfactory to all concerned. When the large horticultural societies can see their way to offer adequate prizes for them they will be exhibited, and the horticultural public will then have an opportunity to see them. The National Auricula Society is bringing the Auricula to the front in the midland counties; and in the neighbourhood of London the Metropolitan Society, of which the Rev. H. H. Dombrain is the Honorary Secretary, offers small prizes at the London shows. Of course, if more exhibitors would come forward better prizes would be offered, and the interest would be much increased. It is certain that one of the best ways to make flowers popular is to bring them forward at the exhibitions, so that a great number of persons, who would not be able to do so if they were not exhibited, may have an opportunity of seeing them.

Others do not take to the Auricula because they believe it is a difficult plant to manage, but such is not the case; any intelligent gardener who can grow other plants well can grow this, and it would be much better to follow the dictates of common sense than it would be to conform to the directions handed down to us by the old florists. No one knowing anything of the physiology of plants would use a compost like the following, recommended by Emmerton:—"Three barrowfuls of goose dung steeped in blood from the butcher's, three barrowfuls

of sugar-bakers' scum, two barrowfuls of fine yellow loam," or the following:—"Two barrowfuls of goose dung steeped in blood, two barrowfuls of scum, two barrowfuls of night soil, and two of yellow loam." Pot any plant, even the grossest feeder, in a compost of which three-fourths are the richest manure, and one-fourth loam, I am perfectly satisfied that it would not do nearly so well as it would if the component parts were reversed—viz., the three parts loam and the one part manure. Such treatment reminds one of Falstaff's account at the Boar's Head Tavern, Eastcheap, where the items were—a capon, 2s. 2d.; sauce, 4d.; sack two gallons, 5s. 8d.; sack after snapper, 2s. 6d.; bread, a halfpenny. Emmerton also says that the compost he recommends "gives life and vigour to the plants, as much as fine old port or rich Madeira wine does to the human constitution." Modern scientific research has conclusively proved that both statements are fallacious. The human constitution is better treated with water than wine, and Auriculas thrive better when the compost is good loam with the addition of a little rotted manure, than when the compost is strong manure with the addition of a little loam. We know more about the culture of plants than the growers of fifty years ago did, and if we did "go in" for Auriculas, we would in the course of a few years show what could be done with these fine old flowers.

Perhaps the greatest hindrance to their culture is the difficulty of obtaining the best sorts. I have tried north and south for sorts that were not uncommon a quarter of a century ago, but they cannot be obtained now for "love nor money." Where is there a better white-edged flower than Taylor's Glory, but who can supply plants of it? I cannot get it, and yet most of the old growers have plants. John Waterston, Smiling Beauty, and Catherina are classed as white edges, but none of them are so pure as Glory. The Green-edged sorts are also very scarce. Booth's Freedom, Page's Champion, Col. Taylor, and Star of Bethlehem: who has those for sale? Grey-edged sorts and Selfs are more common. Amongst the Greys, "D., Deal," places George Lightbody at the head of the list. It is doubtless the best from a florist's point of view, but there are other things to be considered, such as freedom of growth and effect either on the home stage or for exhibition. Col. Champneys (Turner), is, I believe, the freest and most effective Auricula we have. The ground colour runs into the edge a little, but no one would know that this was a fault unless some old florist were to tell him so. We have another type in Sims's Vulcan, a dark Self. It is not a florist's flower because it is fringed, but Mr. Dombrain showed it with a beautiful fringe at the Royal Botanic Society's Show, and I think that the prettily-fringed edge added to its beauty. With it was Pizarro, a very beautiful smooth-edged Self, probably the best in the exhibition. This was also charming in its way, and one did not seem to wish to see it with a fringed edge. The Alpines have been much praised; they are easily grown and are brilliant, but there is a greater sameness amongst them than there is amongst the Selfs. There is nothing amongst the Alpines at all equal to such flowers as Blackbird, C. J. Perry, Lord Clyde, Master Hole, Mrs. Sturrock, and Spalding's Metropolitan.

As to culture, I use turf loam with a little leaf mould and rotted cow or stable manure added to it. River sand is also necessary to keep the compost open. The Auricula is also very impatient of sunshine, either in or out of flower. An hour's exposure to direct sunshine in a hot day about the end of April would spoil their beauty. As soon as they are in flower it is best to remove the frames with the plants to a wall facing north; and here also the plants should remain until early in October. The best growers recommend May as the most suitable time to pot the plants. I have potted our little collection, using smaller pots than are usually recommended. I found that some weakly plants were overpotted last year, and did not succeed so well as those that were in smaller pots. Perfect drainage I hold to be indispensable; some rough material should be placed over the potsherds to prevent the soil from mixing with them.

As respects the varieties to cultivate, from what has been exhibited during the past season and what I have seen in our own collection, the best are:—

*Green-edged*.—Admiral Napier, Alderman Wisbey, Apollo (Hudson), Duke of Wellington (Dickson), Imperator (Litton), Mayflower (Traill), Lovely Ann (Oliver).

*Grey-edged*.—Britannia (Smith), Alderman C. Brown (Headly), Colonel Champneys (Turner), Competitor (Turner), Conqueror of Europe (Waterhouse), George Lightbody (Headly), Mary Ann (Fletcher), Matilda (Dickson), No. 1 Plus Ultra (Fletcher),

Richard Headly (Lightbody), Robert Traill (Lightbody), Unique (McLean), Splendour (Headly).

*White-edged*.—Arabella (Headly), Summerscales' Catherina, John Waterston (Cunningham), Glory (Taylor), Ne Plus Ultra (Smith), Smiling Beauty (Heap), True Briton (Hepworth).

*Selfs*.—Blackbird (Spalding), Crown Prince (Turner), Charles J. Perry (Turner), Formosa (Smith), Master Hole (Turner), Metropolitan (Spalding), Pizarro, Mrs. Sturrock (Martin), Vulcan (Sims).

A few of the best Alpines, all of which have been raised and sent out by Mr. Turner, of Slough, are Brilliant, Defiance, Elcho, Etna, John Leech, Jessie, King of Crinsons, Landseer, Mercury, Nimrod, Novelty, Sydney, and Wonderful.—J. DOUGLAS.

### SNAILS AND SLUGS.

THERE are one or two observations in Mr. Reade's communication (page 368-9) under the above heading that have induced me to offer a few remarks on the same subject. Mr. Reade asks, "When the culprits are caught what is to be done with them?" My plan is to "pickle them in brine." A number of stone jars containing salt and water (about a handful to two or three pints will be quite strong enough) are hid in various parts of the garden under and behind bushes, so as to be out of sight as much as possible, and yet be easily accessible. The culprits when caught are dropped alive into these; and if it be said drowning is the easiest death one can encounter, this may fairly be inferred to be a merciful way of disposing of them, and certainly it is one that is as little revolting to the feelings as can possibly be, and can hardly be objected to even by the most fastidious. Australian meat tins would serve admirably for the purpose, and the collections should be emptied out every week or two on to the refuse or manure heap before they become offensive.

During spring and summer the adult snails will be seen half buried at the foot of bushes and plants; and if, when taken up, a little of the soil be turned over, there will generally be found a cluster of eggs—small round white bodies about the size of a small pea, which should also share the same fate as their parents, for the just-hatched "vermin" do much mischief before they become large enough to attract the attention.

Mr. Reade very justly suggests the winter as the best time for making a raid upon their haunts. The refuse heap will generally be found to be a great attraction, but by very far the greatest success has been obtained by piling-up in its neighbourhood a heap of flint nodules loosely, and without any earth between them, so as to afford spaces for protection. These flints are non-absorbent, and I suppose preferable on that account, as affording a more genial atmosphere for them. Pieces of slate, propped-up so as to afford shelter beneath them, are generally covered over upon every available spot on the sheltered side, and these should be looked over in the spring before the period of hybernation is over. Besides the common garden snail (*Helix aspersa*) there is another (*Helix rufescens*), which is much smaller and flatter, and of a dark brown colour, which is no less destructive, but very apt to be overlooked on account of its inconspicuousness. These are best caught upon pieces of damp wood lying upon the ground under bushes.

Slugs may be taken up very readily and transferred to the pickle by means of a cleft stick when tolerably large, or even when minute if sufficient patience and perseverance be possessed; but, if not, there is no better remedy yet known than syringing late in the evening with clear fresh-made lime water, repeated two or three times successively at intervals of half an hour or so.—W. KENCLEY BRIDGMAN, *Norwich*.

**PRIMULA PARRYI.**—Attempts in England to cultivate the new American *Primula Parryi* have failed. This has, we believe, been the case generally in this country. Some seed given the writer in 1870 by Dr. Parry grew, and struggled along through a season, and finally died. In the spring of 1873 the writer shook out a few seeds from an herbarium specimen gathered on Pike's Peak in 1871. Though two years old they germinated well; but only one got through the summer, and is still alive, though the whole plant is yet no larger than a pea. Just as we were wondering how to manage it, a note from Dr. Parry says: "I have succeeded at last in growing and flowering *Primula Parryi*. I watered it continually with snow water." There is a valuable hint here. Last year the writer saw masses in beautiful flower but just below the snow line, and

close along the edges of the mountain stream from the melting snows above; and Dr. Parry's hint, with our own observations, leads us to the conclusion that to grow this and all alpine plants well, the conditions must be an abundance of light, very cool soil, and a humid atmosphere. A warm atmosphere will not hurt them.—(*American Gardener's Monthly*.)

### GRAFTING LATE IN THE SEASON.

IN a district where orchards form a very important percentage of the acreage, numbers of young trees are of course annually wanted, and many old ones are headed-down and re-grafted with more desirable varieties. Extensive fruit-growers find it necessary to have a nursery of their own, where young trees are worked and brought forward to meet the requirements of the farm or orchard, or what is called "the fruit plantation" in Kent. I see no reason to find fault with the last name, and will here adopt it. To persons who have not visited the districts where fruits are extensively grown for the London and other large markets, the appearance which these fruit plantations generally present in April is very rich. The Plum and Damson blossom (earliest in the season) is usually out in March, and, as a mass, presents a rather dull white colour, from the tints of green with which it is mixed, while the Cherry and Pear furnish as pure a white almost as the Camellia, or some of the best class of Indian Azaleas; but the Apple is, perhaps, the richest of all, and certainly looks best when only about one-fourth or less of the blossom is expanded, the rest being in the rose-tinted bud, nestling amongst the newly-produced leaves, and in favourable seasons as large as a full-sized marble before bursting. I may remark that experienced fruit-growers like to see these well swelled out at this the earliest period of their growth, as a good bold bloom portends a successful fruit-setting if nothing more; moreover, they like, in the case of Apples, for the petals when they fall to do so flat-ways, and not to be curled up, and the larger each petal is than a shilling the better they are liked. In the past season I have heard many assert they have measured some larger than a half-crown, but I have not noticed any of that size; still they are large, and before the setting-in of the cold weather on April 29th the bloom was exceedingly rich and good, and I am not sure yet that the cold weather has done them much harm up to the time I write (May 12th).

A successful blooming and a correspondingly good crop are not secured without the assistance of the manager or grower, and one of his labours is selecting the varieties of fruits that thrive best with him, or which meet the requirements of the market; and as the public taste in the latter respect occasionally varies with the fashions of the day, it is the interest of the grower to keep pace with the wants of his customers, as well as now and then to tempt them with fresh articles: hence the necessity for his renewing from time to time his orchards, thus rendering budding and grafting an essential part of his business; and these operations being often on an extensive scale, there are generally one or more men on the farm to whom they are deputed, and who by practice and observation become skilful at the work.

There is nothing essentially different in the mode by which a "Kentish fruit-tree cutter" (for that is the name usually given to the man who manages the fruit plantations), attaches his scion to the stock from that which has repeatedly been described in this Journal, except in one or two slight particulars, the most important of all being the time at which it was done, which in Kent is much later than in many places where vegetation is not usually in so forward a state. I have seen an Apple headed down in the middle of March, and a number of grafts at once placed on the various limbs so cut off in the ordinary mode of crown grafting; and after the clay was put on, the whole was enclosed in large lumps of moss, giving a grotesque appearance to the tree after dark, especially when a dozen or more of these heads were formed on one tree. But there can be no question of the utility of this moss in preserving the scions from the withering influence of March winds, especially when the precaution is taken of watering them at times. I need hardly say that this is not an easy task; most of the trees so operated upon are too high to get at without a ladder, and that is not always at hand, so that the Kentish man who operates very extensively on such trees rarely adopts the plan, and omits both mossing and watering by postponing the work till a later period—very often till the end of April, and I have certainly seen it very successfully performed as late as the 12th of May; but this is in general too late. Even

in the grafting of young stocks that may not be a great deal larger than the scion, the work is rarely done before the 20th of April with Apples, which are usually left till last, and often much later than that. I find in our own practice about 150 young stocks were so worked on April 26th last year with only three or four failures, and these mostly through accidents, and this year upwards of a hundred were done on the 23rd of the same month with, I trust, a like success. This, of course, is only given as a small example. Those having a large extent of fruit orchard keep their men at the work for some weeks, perhaps beginning with Plums and Cherries, and ending with Apples.

In addition to the above features of lateness there is one other in which the Kentish mode of grafting differs from that generally adopted elsewhere, and that is in the shortness of the scion, for when completed there are seldom more than two buds seen above the clay, and oftentimes only one, thus leaving the portion liable to wither and dry-up by the cold winds common at the time as small as possible, and no doubt experience has taught the advantage of this. The mode of tying on the scion, as well as the application of clay covering, is the same as is common elsewhere, save, perhaps, that the clay is not always of so plastic a kind as many use, but rather a sort of very adhesive loam, it having been found that the latter is less likely to crack—from not shrinking so much, perhaps. In preparing it, cow dung instead of horse droppings is used in the proportion of about one-third, and it is seldom that a crack is met with, even on grafts elevated several feet high, as is necessarily done where old trees are headed down.

It will be understood by all experienced in grafting that when it is performed so late the scions must be taken off beforehand, which is done, and being labelled and tied-up in bundles they are laid with their butt ends in the ground, and often remain there for weeks till wanted; and with Apples, shoots of scarce kinds often make two or more grafts, but generally only one is made, as there is greater uncertainty of the second one succeeding; of course, with a new or scarce sort the second one is often tried. Plums are also usually worked earlier than Apples, the old-fashioned time for both being when they are coming into bloom. How far this differs from the custom elsewhere will be best understood by the practitioners of other counties, but I would advise those not having adopted it to try it and state the result. Of course, the scion must be taken off some time beforehand, and laid-by as described above. As experience on a large scale has taught the advantages of late grafting, no apology is here wanted in advising its being done in other places as well as in Kent.—J. ROBSON.

### AURICULA SEEDLINGS.

As these take several years before they flower, keeping a large number in pots under glass in the distant hope of getting something good involves serious labour, allow me to ask "D., *Deal*," whose contributions I always hail with pleasure, whether they might not more conveniently pass the first two years of their existence in a carefully-prepared border, well guarded against slugs? Even if allowed to bloom there, it is possible that with a little light protection one might be able to determine which should be condemned and which taken up and potted for future trial.

Last year I sowed in the same pan home-saved seed as soon as it was ripe, and purchased seed ripened the year before. Neither came up till last March, and they are still coming up.—G. S.

[It would be impossible to preserve the seedlings of show Auriculae in the open border, their great enemy being damp, and in winter probably all would perish; but Alpines will with care so live in a dry and favoured spot. I saw some very fine plants the other day taken up from the open border, but I have no personal experience of them, save that some old plants which I have planted out have perished.—D., *Deal*.]

**RIPENING OF PEACHES IN MARCH.**—Without wishing to detract from the merit due to Capt. Ashby's gardener, allow me to state that on the 9th of April, 1861, I was awarded a certificate of commendation for a dish of Elruge Nectarines by the Horticultural Society of London, and that they were ripe in the last week of March, but had been retarded in a cool house to keep them for the meeting. I may add that at the same time I also had some Peaches ripe, but as they were required

for another purpose they were not exhibited at the meeting.—WM. GARDINER, *Lower Ealington Park, Stratford-on-Avon*.

### FLOWERS FOR OUR BORDERS.—No. 32.

*GENOTHERA RIPARIA*.—RIVER-BANK EVENING PRIMROSE.

UNDER the incorrect name of *G. prostrata* this pretty dwarf Evening Primrose is now somewhat generally known; and though its flowers are smaller and less showy than those of some other species, we have no doubt that its hardiness, free-flowering habit, and especially the extreme neatness of its foliage, will cause it to rank among the most useful of the tribe. It seems to succeed in any good garden soil.



*Genothera riparia*.

It is a near ally of the polymorphous species *G. fruticosa*, some form of which is to be met with in most gardens, and resembles that species in its inflorescence, but is of weaker habit of growth, and differs in its narrower and more elongated foliage, as well as in the distinctly stalked flowers and seed vessels. Though popularly known as an Evening Primrose, its flowers are diurnal, as in the case of many other species of this genus, and remain expanded several days. It is worthy of note that this species is described as biennial by American botanists, though so far as our observation has gone the plant cultivated under this name in England is certainly perennial.

When first introduced it was much recommended by the late Mr. D. Beaton as a yellow bedding plant, its prostrate growth rendering it very suitable for an edging to beds of taller plants; but the duration of its bloom is by no means co-equal with that of the plants usually employed as bedders, and of late years this species has been mostly confined to the mixed border. Though naturally more or less procumbent, it may, if thought desirable, be tied-up, and will then form a bush  $1\frac{1}{2}$  to 2 feet high. It is easily propagated by cuttings, division, or by seeds, and when pegged down the shoots root freely.—(W. Thompson's *English Flower Garden*, Revised by the Author.)

**RED-LEADING SEEDS.**—Will you allow me to add my testimony to that of Mr. Burgess in favour of red-leading seeds before sowing? I have for the last two seasons adopted the plan precisely as described by Mr. Burgess in your Journal of April 30th, and with the most complete success, for whereas

formerly I had whole rows of Peas, &c., devoured by mice, I now never lose a single seed.—J. G. B. KNIGHT, *Danbury*.

### MR. W. PAUL'S SHOW OF ROSES.

THIS year Mr. W. Paul has chosen the Crystal Palace for his annual display; and on the site of the tropical department, which was burnt down, he has brought together under a large tent a very extensive and well-arranged exhibition. Roses, of course, are the great feature, but Palms, Ferns, and other fine-foliaged plants are judiciously introduced, along with an abundance of Zonal Pelargoniums of various classes. The whole arrangement is tasteful, the staging not being in harsh straight lines but curved at the corners, and in the centre is a fountain surrounded with rockwork, dwarf Palms, and at regular distances plants of Princess Beatrice Rose. Of older kinds there are grand specimens of Charles Lawson (several of these), Souvenir d'un Ami, John Hopper, Cœur de Lion, President, Elizabeth Vigneron, La Reine, Anna Alexieff, Beauty of Waltham, Victor Verdier, and many more. On other specimens are blooms remarkable for their size and beauty; of such we especially noted Princess Christian, Marquise de Castellane, Paul Néron, Baroness Rothschild, Madame Charles Verdier, and many beautiful Tea varieties. In addition, there are several stands containing some of the finest trusses ever exhibited, one box of Maréchal Niel alone being conspicuous by its rich golden hue.

Of the newer varieties Princess Christian and Princess Beatrice have long ere this fully established their reputation. Peach Blossom has been noticed in recent reports; and Firebrand, dark maroon crimson with a glowing red centre, is here large and very telling; and so is Star of Waltham, a fine deep carmine, and which is dazzling in colour. Zonal Pelargoniums are represented in numerous groups: Remus, white, with a lake eye, is noticeable for its fine form and habit; and Paul Pry, magenta, with a white eye, for its brilliant colour. With these are several fine Tricolors, as Countess of Flanders and Lady Dorothy Nevill.

We congratulate Mr. W. Paul on the opportune time which he selected for his exhibition, and which enabled His Imperial Majesty the Czar to see what English-grown Roses really are, and we hope that many more will, ere it close on Saturday next, visit an exhibition which fully sustains Mr. Paul's well-earned reputation.

### THE NATIONAL AURICULA SOCIETY'S SHOW AT MANCHESTER.

THE above was held in conjunction with the Manchester Botanical Society's Show on April 28th.

The exhibition of Auriculas was very good, and a great many fine flowers were there from the twenty-one competitors. Some of us had feared being rather late, but a week or more of unseasonably hot weather brought the backward collections well up. Those, however, suffered a good deal who, like myself, had many plants in fine bloom before the high temperature set in. It caught a great number of mine at their best and drove them beyond it. There was no keeping them cool even in north-aspect frames.

In Polyanthus the strength of the bloom was over, the trusses being in many cases the later ones that follow the chief. However, the blooms were fair for the season, the Polyanthus being such a light sleeper in the winter rest that anything like an open season brings it into bloom quite before the Auricula. Most of mine were in fine order at the end of March.

The names of the winning flowers show a rich variety in cultivation among the northern growers. Established favourites, such as Colonel Taylor in green edges, George Lightbody in greys, and Smiling Beauty in white edges, have been strongly brought forward.

Some new flowers will by-and-bye be coming to run the old etagers very hard. If Traill's Princes of Greens—one of his last—had but a better-coloured tube no green-edge would stand against it. It is a noble plant in habit and in truss, and the three trusses I had of it stood out grandly on the stages; pips all alike good, but tube greenish.

Traill's Anna, a seedling from Booth's Freedom, is a very fine sort if it can be made into a plant. Habit difficult, like that of its parent. A capital green edge.

In the winners among single greys we have one of the new comers leading the class. I have seen George Leno beat the celebrated George Lightbody in private, and now it has proved itself in public in competition with Lancashire Hero and Mr. Headly's Great Grey. The flower is strikingly brilliant in all properties. Rose-leaf petal like George Lightbody, lively rich

black body colour, splendid paste, and tube tolerable and inferior to the two I name with it. Strong trusses from a healthy but small-growing plant which in winter goes down to a mere leaf or two.

Alex. Meiklejohn is a very distinct grey edge. A keen critic, seeing my plant, said over it, "Well done, George Lightbody," which speaks to the character it was in. It is a Scotch flower hardly known across the border yet. The raising of Auriculas from seed goes on strongly among us here, and from several growers carefully crossing the best varieties extant something better than the present best may in time be looked for.

It is impossible to over-estimate the worth of very great care and judgment in selecting parents for seedling Auriculas.

#### PRIZE LIST—AURICULAS.

Class A.—*Six dissimilar, one in each of the classes*.—First, R. Lord with Complete, George Lightbody, Colonel Taylor, Apollo (Hudson), Regular, Blackbird; second, F. D. Horner with Smiling Beauty, Bolivar, Lord Palmerston, Meteor Flag, Alex. Meiklejohn, King Coffee (seedling F. D. Horner); third, H. Wilson with George Lightbody, Meteor Flag, Colonel Taylor, Blackbird, Maria, Smiling Beauty; fourth, E. Elliott with Complete, Imperator, Privateer, Mrs. Smith, Bolivar, Smiling Beauty.

Class B.—*Four dissimilar, one in each class*.—First, R. Lord with George Lightbody, Colonel Taylor, Earl Grosvenor, Meteor Flag; second, F. D. Horner with Smiling Beauty, Colonel Taylor, Complete, Smith's Garland; third, H. Wilson with George Lightbody, Colonel Taylor, Regular, Meteor Flag; fourth, A. Barker with George Lightbody, Colonel Taylor, Taylor's Incomparable, Lord Lorne.

Class C.—*Pairs*.—First, F. D. Horner with Smiling Beauty and Charles Brown; second, Benjamin Simonite with Lancashire Hero and Lord Lorne; third, A. Barker with Lancashire Hero and Pizarro; fourth, R. Lord with George Lightbody and Lord Palmerston.

Class D.—*Green edges*.—Premium, E. Elliott with Imperator; first, Dr. Foster with Booth's Freedom; second, F. D. Horner with Prince of Greens; third, R. Lord with Imperator; fourth, R. Lord with Traill's Anna; fifth, R. Lord with Prince of Wales; sixth, F. D. Horner with Lancashire Hero; seventh, F. D. Horner with John Bright; eighth, Benjamin Simonite with Seedling.

Class E.—*Grey edges*.—Premium, J. Walker with George Leno; first, J. Rowland with Lancashire Hero; second, J. Rowland with Complete; third, A. Barker with George Lightbody; fourth, E. Pohlman with Ne Plus Ultra; fifth, A. Barker with Privateer; sixth, J. Rowland with R. Traill; seventh, H. Wilson with Ringleader; eighth, E. Elliott with Conqueror of Europe.

Class F.—*White edges*.—Premium, R. Lord with Smiling Beauty; first, H. Wilson with True Briton; second, R. Lord with Smiling Beauty; third, F. D. Horner with Catherines; fourth, R. Lord with Bright Venus; fifth, R. Lord with Lady Dumasque; sixth, Dr. Foster with Taylor's Glory; seventh, A. Barker with Incomparable (Taylor); eighth, B. Simonite with Miss Giddings.

Class G.—*Selfs*.—Premium, J. Rowland with Lord Clyde; first, Dr. Foster with Pizarro; second, Dr. Foster with Blackbird; third, J. Rowland with Meteor Flag; fourth, B. Simonite with Lord Lorne; fifth, A. Barker with Formosa; sixth, A. Barker with Lord Clyde; seventh, Dr. Foster with Vulcan; eighth, F. D. Horner with Mrs. Sturrock.

Class H.—*Alpines*.—First, E. Elliott with Conspicua; second, J. Wild with Goliath; third, R. Gorton with Minnie; fourth, S. Cooper with Prior; fifth, R. Gorton with John Tenniel; sixth, R. Gorton with Miss Reed.

#### POLYANTHUSES.

*Special prizes for dissimilar pairs, given by S. Cooper, Esq., Manchester*.—First, F. D. Horner with Cheshire Favourite and Lord Lincoln; second, J. Rowland with Lord Lincoln and Exile; third, E. Elliott with Beauty of England and Exile.

*Single Plants*.—Premium, J. Rowland with Lord Lincoln; first, F. D. Horner with Seedling from Lincoln; second, E. Elliott with Exile; third, D. Jackson with Beauty of England; fourth, D. Jackson with Rev. F. D. Horner; fifth, E. Elliott with Kingfisher; sixth, E. Elliott with Kingfisher; seventh, M. Partington with Beauty of England; eighth, F. D. Horner with Lincoln.—F. D. HORNER, *Kirkby Malzeard, Ripon*.

### THE CLOTH OF GOLD ROSE.

MORE than twenty years ago I purchased a plant of the beautiful Noisette Rose known as the Chromatella, or Cloth of Gold. It has been a favourite of mine ever since, and although many competitors of a similar colour have been introduced, like Maréchal Niel and Isabella Sprunt, still our old Rose is without a superior. Like some other varieties of this class, the plants do not bloom very freely upon their own

roots until two or three years old, but then they make up for lost time. When grafted or budded upon strong Manetti or other free-growing stocks, the plants will bloom when only a few months old; but the novice in Rose culture is very likely to allow suckers to grow from the roots of the stock, thereby robbing the graft of sustenance, soon destroying it. If a person can only have patience, and wait for a plant on its own roots to attain age or size, he will be well repaid in abundance of the most deliciously fragrant, large, pale lemon-yellow coloured Roses, that the most enthusiastic admirer of flowers could desire. A six-year-old plant of this old Cloth of Gold Rose has been perfuming my greenhouse for several weeks, and to-day it is loaded with dozens of full-blown flowers and half-opened buds; and, upon the whole, it is as grand an ornament as one could wish for conservatory or parlour. If a person has no greenhouse in which to keep the plants in winter, they may be bent down and covered with earth, or dug-up and heeled-in, and then protected with coarse litter or manure.—(*American Horticulturist*.)

#### MR. JOHN SALTER.

It is so much now the custom to drop a wreath into the grave of those we love and respect, that I am sure I shall be excused if metaphorically I do the same to the memory of one who has so recently departed from amongst us, and whose gentle and benevolent face we shall miss from amongst the few gatherings of florists which the metropolis affords—my old and valued friend Mr. John Salter. Like many an old florist, he did not commence life in that calling, but having courted Flora, he found, as many a one has done, that her seductive smiles and winning ways lured him on further than he at first intended. I never knew him when he was living at Versailles, but I do know that his memory is cherished there by many with whom he was associated either in business or friendship. When he removed, after 1848, to England and settled at Hammersmith he carried on, as all florists know, most successfully the culture of the Chrysanthemum; and it was one of the treats of the early winter in London to go round with him through his winter garden, and get him to expatiate on the beauties of his favourites—a treat which, however, we have missed for some years, owing to the nursery being occupied by one of the numerous railways, which spare nothing. Besides the Chrysanthemum, Mr. Salter cultivated successfully the Pyrethrum and other herbaceous plants, especially those with variegated foliage. Although he had retired from business he still took an interest in all pertaining to horticulture, and was a member of the Floral Committee of the Royal Horticultural Society. And now he is gone from us. Of the many men I have known there were few who more thoroughly seemed to me to fulfil the wish to "hurt nobody by word or deed;" and I think if I had to select a wreath of flowers to place on his grave I should like it to be made of one that would thoroughly express his worth—"Golden John Salter."—D., Deal.

To the above notice of the demise of this esteemed veteran we will merely add a few facts as to the career of one of the kindest and gentlest of men, and one to whom Chrysanthemum growers are indebted for the present perfection of that flower.

John Salter, who was born on January 27th, 1798, commenced his horticultural career as an amateur at Shepherd's Bush, near London. Softwooded and herbaceous plants were always his favourites. Auriculas, Ranunculuses, Dahlias, and English Iris he cultivated with success. Roses then flourished near London, and he took several journeys to France to procure new varieties. Aimée Vibert and Jaune Desprez opened their first flowers in this country in his garden.

In the year 1838 he removed to Versailles, near Paris, and there founded an establishment for the sale of English flowers. Dahlias were but little grown in France. Such varieties as *Striata Formosissima* were looked upon by our French friends as floricultural wonders. It was about this time that the Chrysanthemum first occupied his attention. The Chinese varieties were then growing at Chiswick, and his friend the late Dr. Lindley gave him plants of all that could be spared. They succeeded well at Versailles, and he soon had the pleasure of raising King of Crimsuns, Annie Salter, and Madame Poggi. Some French amateurs near Toulouse also grew them, and for some years a rivalry was kept up between Messrs. Bernet, Lebory, and Salter as to who should raise the best. In 1848 he was compelled to leave his much-loved Versailles; the political changes of that year rendering his stay unadvisable, a prosperous establishment was discontinued and he

returned to England. Suitable premises having been found at Hammersmith, the Versailles nursery took its rise, and there the Chrysanthemum was made the plant *par excellence*. Queen of England was the leading novelty in his first catalogue.

Great difficulty having been experienced in ripening seed near London a remedy was soon found, and the best varieties were sent to friends in Italy, the south of France, and the Cape, and from thence he annually received seed; and those who were in the habit of visiting the autumn exhibitions at Hammersmith will remember with what pleasure the seedlings were shown, and what pains he took in pointing out all that were gains, or likely to prove so.

The Japanese varieties, introduced in 1862 by Mr. Fortune, were considered by some of the old growers as worthless; but Mr. Salter saw in them a new type, and his expectations were more than realised when the first seedlings flowered. Nearly all the varieties now cultivated were raised by him.

Mr. Salter was fond of collecting curious plants, and the Versailles Nursery was often called the Horticultural Curiosity Shop. Hardy variegated plants he largely cultivated, and among them the Variegated Lily of the Valley, exhibited by him at the International Exhibition in 1866, attracted much attention. Among herbaceous plants, the single varieties of Pyrethrum roseum had been cultivated by him for some years; to increase the stock, plants were raised from seed, and a tendency to produce double flowers having been observed, much attention was paid to them, and simultaneously with some double ones making their appearance in France, he raised Alfred Salter and Princess Alexandra.

Failing health obliged him to withdraw from the more active duties of his business, which was latterly principally conducted by his son Mr. Alfred Salter; and in 1869, the Metropolitan District Railway requiring his land, he retired, but not from the cultivation of flowers; he loved his old favourites to the last. An attack of paralysis in the spring of 1873 so much enfeebled him as to prevent even his attendance at the meeting of the Floral Committee of Horticultural Society, of which he was a member for many years. A second stroke which he had in May, 1874, proved fatal, and after three weeks of almost total unconsciousness he peacefully fell asleep, on the 10th inst., at the age of 76.

#### ROYAL BOTANIC SOCIETY'S SHOW.

UNQUESTIONABLY the best Show we have had at the Regent's Park for some years was that held yesterday. The arrangement, as usual, in the large tent was extremely effective; the plants, to which the Show was confined, were exquisite in their freshness, for the most part specimens of high cultivation, and what is of no small consequence in such an exhibition, there were very few to which exception could be taken. We have only space for a brief review.

The stove and greenhouse classes presented very little difference in the kinds of plants shown from previous exhibitions. It is high time something fresh should be imported into them to give an interest, for one grows weary of the same plants year after year. Mr. Ward, gardener to F. G. Wilkins, Esq., and Mr. Chapman, gardener to J. Spode, Esq., Hawkesyard Park, carried off the chief honours for twelve with specimens which did them much credit; whilst in the class for six the positions were reversed, the competition in both cases being close. In the nurserymen's classes Messrs. Jackson, of Kingston, and Mr. Williams carried off the chief prizes.

Of Orchids Mr. Ward sent good groups of nine and six, in each case taking the first place; while Mr. Hill, gardener to R. Hanbury, Esq., The Poles, Ware, was second in the latter class with, among others, large *Vanda* and *Phalenopsis Lueddemanniana*. The best specimen Orchid (nurserymen) was *Acridis Fieldingii* from Mr. Williams; from amateurs a variety of *Cattleya Mossiae* from Mr. Jamea, gardener to W. F. Watson, Esq., Isleworth; Mr. Cole, gardener to J. Budgett, Esq., Ealing Park, being second with a fine mass of *Oncidium sphacelatum majus*. From Mr. J. Hill, gardener to Sir W. Marriott, Down House, Blandford, came a fine specimen of *Dendrobium Falconeri*, bearing a profusion of its beautiful blossoms.

For Roses in pots, both large and small specimens, the honours were divided between Messrs. Turner and Paul & Son, the former being first for six, the latter for nine, and Mr. Turner again first for twenty; and where the one was not first the other was a good second, the specimens in all cases being of the highest merit. We also noticed an excellent group from Mr. Terry, of Youngsbury.

Azaleas were altogether better than at the Palace Show, but not what they were some years ago. Messrs. Child, Williams, Lane, J. Wheeler, Ivery, and Turner, well deserved their places in the prize list. Mr. Ward, Mr. Kemp, and Messrs. Jackson

and Morse took several prizes for well-flowered Heaths; whilst of Pelargoniums by far the best were those from Mr. Ward, in whose nine Rob Roy, Patroness, Lady Canning, Rose Celestial, and Warrior were especially good. Palms, Exotic Ferns, and fine-foliaged plants were amply represented, those from Mr. Williams being large and remarkably fine specimens. We may note of the first his Livistonas, Cocos Weddelliana, Phœnicophorium sechellarum, and of the second his Gleichenias; whilst of the last he had many noble specimens. Among amateurs, for fine-foliaged plants Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, was first with an excellent half-dozen, in which were a magnificent specimen of *Alocasia metallica*, and a very fine *Corypha australis*. Mr. Cole, Ealing Park, was an excellent second; and Mr. Douglas, gardener to Mrs. Robinson, Mount Pleasant, a good third.

Mr. James and Messrs. Dobson, of Isleworth, also Messrs. Jackson, of Kingston, sent excellent groups of herbaceous Calceolarias; Mr. Turner, Tulips; Mr. Williams, of Holloway, new plants, especially noticeable among which were the white-spathed *Anthurium Williamsii*, *Amaryllis virginialis*, a striking white kind, *Adiantum gracilimum*, noticed last week, &c. Messrs E. G. Henderson sent seedling *Mimulus* and some other new plants; and Mr. R. Smith, of Worcester, a collection of Japanese Acers and one of ornamental Oaks, which were very interesting.

## FLORENCE INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

THE Exhibition was opened on the 11th inst., in the building which has been erected for the new markets. The building may be said to consist of a nave and two aisles, and covers a space about 230 feet long by 270 broad. On entering it from the Via Chiara we find the area laid out in groups round a large basin of water, from the centre of which a jet 40 to 50 feet in height is kept constantly playing. This is a feature we have never seen in any of the previous International Exhibitions, and we would commend it as a suggestion to be followed wherever practicable on future occasions. It has the effect of giving life and action, in contrast to the calm repose which is associated with the surrounding groups of plants, and is certainly much more effective than the miserable attempts at waterfalls which we have seen made at some of the previous exhibitions we have visited.

At the extreme end facing the entrance there is a rather extensive and well-constructed piece of rockwork formed of masses of tufa, which is found plentifully in the Apennine Mountains close by; and this is surmounted with fine specimens of *Magnolia grandiflora* 20 feet high, *Yuccas*, *Dasyliirions*, *Phormiums*, and *Azaleas*, behind which there is a cascade with a fall of 8 or 10 feet. The centre in front of the fountain is occupied with a large oval in the direction of the length of the building, and this is filled with small plants of *Azalea indica*, such as one sees in the Belgian exhibitions, but they do not furnish such a blaze of colour from the almost equal admixture of leaves and flowers. To some this may be more agreeable than the excess of colour which is prevalent in our exhibitions of *Azaleas* at home.

Flanking these, and forming groups round the iron columns that support the nave, are splendid specimens of fine-foliaged plants sent by Prince Demidoff from his villa at Florence, and the Marquis Corsi-Salviati, on the right; and those on the left are supplied from the garden of the Museum of Natural History and of the city of Florence. Just beyond the fountain, and between it and the rockwork already mentioned, are two groups of well-bloomed *Azaleas* backed-up with good specimen *Cyatheas*, *Philodendrons*, *Dicksonia antarctica*, and interspersed among them were *Azaleas*.

On the left, beyond these groups, and under the left aisle, there are three glazed pavilions erected for the more tender plants, to which we shall again refer, and these are surrounded by sinuous banks of fine-foliaged and flowering plants supplied by M. Dallièrre, of Ghent. In a corresponding position under the right aisle there is Neptune blowing water out of a conch shell, and surrounded with a group of fine-foliaged and flowering plants, in the centre of which is a towering specimen of a hybrid *Rhododendron arboreum*, very large cylindrical specimens of *Hoya carnosus* and *Stephanotis floribunda*. This group also contains large specimens of *Polygala alternifolia* and a *Kalmia latifolia* of very large size, which one would have supposed to have come from Knaphill had it not been that it bore a ticket intimating that it had been grown in the garden of Count Boutarlin since April, 1834. Here also is a fine group furnished by M. Linden, of Ghent and Brussels.

We were pleased to see that British horticulture was not un-

represented, Messrs. Veitch & Sons being present with a select collection of Pitcher-plants and a nice collection of rarities.

Such is the general outline of the Exhibition in the great central hall; but there are two annexes in which are exhibited miscellaneous objects, such as fruits dried and fresh, dried plants, botanical and horticultural plates and books, woods of various kinds, terra-cotta figures, bee hives and honey; and in the open spaces collections of herbaceous and other hardy plants, implements, and structures, all of which we shall refer to in our continuation of the report next week.

THE paragraph we give above would have appeared last week if the Italian post were as rapid as that in England; it was written before the arrangements were completed, and while the space outside of the building was in incomprehensible confusion. At an early hour on the morning of the opening day, however, the whole had an aspect of order and completeness of arrangement which the managers of similar exhibitions in this country would do well to imitate. Although complaints had been made by the executive that exhibitors were late in making their entries, it could not be said that on the morning of the opening they retarded in any way the programme of the day. By eight o'clock the place was in perfect order, and nothing remained to be done before the arrival of the King at ten, but to lay down carpets and finish other decorations which are necessary on occasions when Royalty is present. It would be well if our exhibitors were to practise similar promptitude, and then there would not be the numerous complaints of faulty grouping and bad placing which we are so much accustomed to hear of.

The first impression on entering the building was a sense of emptiness from the great height of the nave, and from the centre area being occupied with masses of dwarf plants, which are elevated not more than 4 feet in the highest part, and the sides being filled with the larger plants, such as Palms and Pandanus. The great height of the building in proportion to the size of the plants reminded us of the exhibitions at the Crystal Palace, where the same effect is produced; but if the plants had been raised artificially much higher than they were, so as to have shortened the space between them and the roof, the elevation would have been too great, and the beauty of the plants would have been sacrificed through being so much above the eye.

The method of arrangement here was that which we have long observed to be the prevalent one on the Continent. It matters not whether it be the grouping of a flower show, the arrangement of clocks and candelabra on a chimneypiece, or the setting-out of a console table; the lowest objects are always placed in the centre, and the highest on the outside. Look at the chimneypiece of any English household, and you will find it quite the contrary. Look at our horticultural exhibitions, and you will find the tallest plants are generally placed in the centre of the room or space where they are held. The large tents at South Kensington are an exception to this, for there the centre is hollow and the sides elevated; but in the generality of exhibition tents there will be found a high stage running the whole length of the centre, with a passage and low table on either side of it. This is what we have always seen at the Crystal Palace. We express no opinion as to which is the preferable way, and no doubt there will be advocates found to justify both.

This feeling of voidness was, however, soon dispelled, for the constant playing of the high fountain which we have mentioned, and the rockwork and waterfall behind, speedily attracted the eye, and it was gradually carried round to the fine groups which embellished the sides and led up to the picturesque arrangement which occupied the side aisles.

Before proceeding to remark upon the groups in detail it may be well to mention that they were all edged round with pieces of tufa a foot high, the interstices between which were filled with sphagnum, and the top very prettily planted with flowering plants, among which the most striking were the beautiful and very effective *Ixia crocata*, *Deutzia gracilis*, the charming little *Rose de Meaux* or *Pompone* as the French generally call it, *Pansies*, *Cinerarias*, small *Dracenas*, *Alstromerias*, striped *Curculigo*, *Mimulus guttata*, and similar plants. This edging looked well, and was a good contrast to the uniform green of the fine-foliaged plants, which are so prevalent.

Having given already a description of the general arrangement, we shall now proceed to examine the collections and groups more in detail.

On the right, as we entered the building, the first object to which

we were attracted was a very fine specimen of *Ruscus androgynus* in a tub, trained in cylindrical shape, about 25 feet high. It was remarkably well grown, and, standing apart as it did, stood out in a prominent position. Then we had the magnificent group of Prince Demidoff, containing a collection of Palms such as are rarely to be seen. Among these were *Corypha australis*, *Areca rubra*, *Cocos australis*, a splendid *Seaforthia elegans*, *Areca Verschaffeltii* and *Intescens*, *Phoenix dactylifera*, *Phoenix dactylifera sylvestris*, *Phoenix spinosa*, *Brahia dulcis*, *Caryota urens*, and *Pritchardia pacifica*. Interspersed among these were noble specimens of *Dasyllirion serratifolium*, and *D. longifolium*, remarkably fine specimens of *Cycas revoluta*, *Letsea geminifolia*, and *Hechtia planifolia*. We also observed very tall plants of *Dracena arborea*, *Coccoloba Blumei*, *Agnostus sinuata*, and *Banksia serrata*. Altogether this was a fine collection, and the plants were well grown, and correctly as well as distinctly named. We must not omit to notice a fine plant of *Brownia grandiceps*, which towered up among the Palms, rivalling in height the lofty *Caryota urens*, and crested with a plume of its delicate feathery-looking pinnate young leaves.

The next we came to was the collection of the Marquis Corsi-Salvati, to whom we are personally indebted for many kindnesses and attentions received during the Exhibition. This occupied a space equal to that filled by Prince Demidoff, but the plants though more varied were not so large, yet they contributed very importantly to the effect of the Exhibition. Here there were fine plants of *Cycas revoluta*, *Cocos oleracea* and *australis*, *Corypha australis*, *Phoenix dactylifera*, *Chamaedorea elegans*, *Rhapis flabelliformis*, *Carludovica palmata*, *Pandanus furcatus*, *Strelitzia angusta*, *Pandanus utilis*, and *Seaforthia elegans*. At the farther end of this S. di Conti-Salvati exhibited a fine group of Ferns, consisting of excellent plants of *Cibotium Schiedeii*, *C. spectabile*, and *C. princeps*, *Lomaria cycadifolia*, *Alsophila contaminans*, *Cyathea dealbata*, and *C. funebris*, *Diplazium arborescens*, *Asplenium nidus-avis*, and *Dicksonia arborescens*; but perhaps the gem of the Ferns was an enormous mass of *Todea africana* in a pot  $4\frac{1}{2}$  feet in diameter and  $3\frac{1}{2}$  feet high. The mass itself stood 3 feet high, and was 3 feet 6 inches wide.

There were also some very handsome Tree Ferns exhibited by Cav. Sen. Emanuele Feuzi, one of the Secretaries of the Society, such as *Dicksonia antarctica*, *Cyathea dealbata*, *Balanium antarcticum*, and a fine mass of *Todea barbara*, the stipes of which was over 2 feet high and 24 feet in diameter.

Corresponding with the *Ruscus* on the right we had on the left of the centre area a fine specimen of *Cocos oleracea* from the Museum of Natural History of Florence. The earthenware pot in which this was grown was worthy of notice, it being 5 feet high, and 4 feet 6 inches wide at the top, a size which we in England never dream of.

The collection from the Museum of Natural History of Florence was a rich one, containing some very fine and well-grown specimens, among which were *Elaeis guineensis*, *Livistonia Skinneri*, *Arenga obtusifolia*, *Pandanus odoratissimus*, *Latania borbonica* and *rubra*, *Areca rubra*, *Encarpus filamentosus*, *Acroemia sclerocarpa*, *Chamaedorea Schiediana*, *Sabal umbraculifera*, *Ceratostamia mexicana*, *Encephalartos caffer*, *Cycas revoluta*, *Rhynchospermum jasmynoides*, *Tipidanthus clypeatus*, *Pandanus utilis*, *Pandanus javanicus fol. var.*, and these were interspersed with flowering *Azaleas*, *Dracenas* with coloured foliage, and other plants of a similar character to give colour and brightness to a mass which would otherwise have been heavy and sombre.

There were some very fine plants in the collection sent from the garden of the Municipality of Florence, among which were most notable fine specimens of *Pandanus odoratissimus*, *Alsophila australis*, *Monstera deliciosa*, or as it was called *Dracunculus pertusum*, *Dracena frsgrans*, *Alocasia odora*, *Coccoloba excoxiata*, *Cinnamomum albiflorum*, *Antidesma alexiteria*, *Coffea arabica*, and a large *Ficus elastica*.

Immediately adjoining this collection there was a fine group of Ferns from the Botanic Garden, including good specimens of *Dicksonia antarctica*, *Todea rivularis*, *Cyathea dealbata*, *Cibotium princeps*, and *Alsophila australis*.

These were the most prominent features which were to be seen in the nave, and we shall now simply note some of the leading plants and special objects that were to be met with in the Exhibition. To describe in detail the whole of the objects exhibited would be useless labour to ourselves and tedious to our readers. In this as in all other exhibitions of the kind there were numerous things which helped to give effect and to make up the whole, which, when examined in detail, had no individual interest. We shall therefore without any particular order make note of the various things as we met with them; and here we may remark that the absence of any catalogue on the third day after the opening was a great deprivation.

Let us begin first with the new plants. Here it was that our own countrymen, Messrs. Veitch & Sons, of Chelsea, and Dr. David Moore, of Dublin, were to be found. The former exhibited a collection of all the new things for which they had from time to

time received certificates at the meetings and exhibitions of the Royal Horticultural Society during the past season; and especially a collection of Pitcher-plants, which attracted great attention from the visitors. These were *Nepenthes Hookeri*, *N. distillatoria*, *N. ampullacea variegata*, *N. hybrida*, *N. hybrida maculata*, and *N. Sedeni*, the three latter hybrids raised in the nursery of Messrs. Veitch between *N. distillatoria* and a species from Borneo. The other plants were *Dieffenbachia Bausei*, *Dracena Baptisii*, *Cheloni*, *Amabilis magnifica* and *imperialis* Hendersoni, and *stratifolia*; *Croton Weismanni*, Youngi, and *undulatum*; *Aralia elegantissima* and *Veitchii*; *Tillandsia Zahnii*, *Abutilon Sellowianum marmoratum*, *Cypripedium Argus*, *C. Dominianum*, *Ficus Parcellii*, and *Epidendrum pseud-Epidendrum*. Dr. Moore had a hybrid *Sarracenia* raised between *S. flava* and *S. Drummondii*. Its habit is the strong free growth of *S. flava*, while it has the highly-coloured pitchers of *Drummondii*. The flowers are yellow internally, and deeply stained with red on the outside. This is, we believe, the first instance of hybridisation having been effected artificially between species of *Sarracenas*; and though it has been exhibited under the provisional name of *S. hybrida*, it would only be proper that Dr. Moore's name should be associated with it, and that it be henceforth known as *Sarracenia Moorei*. Dr. Moore also brought with him a good plant of *Ouvirandra fenestralis*, which appeared to have travelled in excellent condition, also some plants of *Cephalotus follicularis*, which appeared to attract much attention.

Mr. Auguste Van Geert, of Ghent, had a collection of new plants, consisting of *Pandanus Van Geertii*, *Areca Dicksoni*, *Kentia Fosteriana*, *Corypha australis* var. *ferruginea*, and *Copernicia cerifera*.

Mr. Linden, of Ghent, occupied a large space with a collection of remarkable plants, among which we noted a splendid specimen of *Dracena gloriosa* beautifully coloured, *Phormium atropurpureum*, *Dieffenbachia Banmsnii*, *Phormium Colensoi*, *Artocarpus grandis*, *Dieffenbachia Parlatoei*, *Dracena Reali*; *Araucaria robusta glauca* is a fine variety of excelsa, dense in habit and with a glaucous bloom on the leaves; *Zamia Roezlii*, *Philodendron parimense*, and *Phyllotenus Lindenii*. Mr. Linden had a group of *Aceers*, including *A. palmatum roseo-dissectum*, *palmatum sanguineum*, *atro-purpureum*, *reticulatum*, and *crispum*; and also some choice Palms, of which *Cocos elegantissima*, the only plant in Europe of the species, was the most attractive from its graceful habit and novelty.

M. L. Buchner, of Monaco, exhibited a fine lot of *Araliaceæ*, to which he appears to devote especial attention. We remarked *Aralia dentata*, *trifoliata*, *pulchra*, *peltata*, *dactylifolia*, *reticulata*, *Sieboldi variegata*, *papyrifera*, *quercifolia*, *nymphetolia*, *digitata*, *mexicana*, *lucida*, *heteromorpha*, *parasitica*, *granatensis*, *Thibautii*, *crassifolia*, *leptophylla*, *pentaphylla variegata*, *Osyana*, *Shepherdii*, *Guilfoylia*, *Lindenii*, *amboinensis*, and *novae-zelandiae*.

A beautiful group of *Crotons* was shown by Prince Demidoff, which occupied a large space in one of the pavilions, and we could not but remark in examining these plants how much more richly-coloured the leaves are than with us, due, no doubt, to the greater amount of light they receive in this southern climate.

The centre of one of the pavilions was filled by a mass of well-grown plants belonging to Marquis Torrigiani, of Florence. This produced a very good effect, and contained some excellently-grown *Crotons*, a *Phœnicophorium sechellianum*, *Areca alba*, and numerous *Dracenas*, *Caladiums*, *Dieffenbachias*, and *Cypripediums*.

The centre of a corresponding pavilion to the former was filled by plants from the garden of the Marquis Corsi-Salvati; and here we observed some that were remarkably well grown. Of these the most striking were *Anthurium regale*, *Angiopteris evecta*, *Dieffenbachia gigantea*, *Areca Verschaffeltii*, *Sphaerogyn latifolia*, and *Verschaffeltia splendida*. In the same pavilion the same nobleman had collections of *Crotons*, *Dracenas*, *Marantas*, and *Orchids*, which displayed meritorious cultivation. We especially remarked among the latter a good specimen of the Foxglove (*Aërides Fieldingii*), also *Vanda suavis*, *Cattleya amethystina*, and *C. elegans*. Here also was a good specimen of *Adiantum farleyense*.

In this same pavilion Mr. Willink, of Amsterdam, had a very attractive specimen of *Selaginella cæsia arborea*, a wonderfully strong-growing variety of this beautiful plant. It was 6 feet wide and 3 feet high, and glistening beautifully in its iridescent blue and green.

There were not many *Orchids* shown. With the exception of a few *Cattleya Mossii*, *Vanda tricolor*, and *Cypripediums* there were few more than we have already noted in the collections. *Orchids* do not seem to have much attraction for Italian horticulturists, if we may judge by the limited number to be met with here.

*Azalea indica* contributed the greatest amount of colour to the Show, and these were supplied by Cavaliere Cesare Franchetti, Conti Ugolino della Gherardesca, Marquis Nicolo Rudolff, and Prince Demidoff.

Palms were in great abundance besides those mentioned in

the large groups of fine-foliaged plants, and to Mr. Alexis Dallière, of Ghent, the Exhibition is indebted for much assistance in this respect. Mr. Dallière had no less than forty specimen plants, some of them of large size, which must have been conveyed at great cost from such a distance. Another good collection came from M. Rivière, Director of the Experimental Garden of Hamma, in Algeria.

Cactaceæ were well represented by a splendid collection of large plants exhibited by Signor Emmanuele Fenzi, one of the Secretaries of the Exhibition. It consisted of about a hundred plants, all very well grown; and there was also a good lot from Signor Schepp, of Naples.

It was to be expected that Oranges and Lemons would be shown, and these were arranged in the small garden outside the building, where they served as a screen from the street. They were mainly from the Boboli Garden, and there were some excellent specimens shown by Sig. Conti Fratelli, of whom we have already spoken. Roses in pots appeared in large quantities, but there was nothing special in their cultivation to call for remark, except that they would not have been considered of great merit at any exhibition in England. There was a great lack of what we call "finish" about them, though very well bloomed.

In a large collection of variegated plants sent by the Municipality of the City of Florence we saw nothing but what is already in England. In a house adjoining this group was a fine specimen of *Lepidostamia Peroffskianum*, exhibited by Conti Angelo e Niccola Papadopoli, of Venice.

In what may be called FLORISTS' FLOWERS there was nothing calling for particular attention, unless, from our English point of view, to condemn them. Horticulturists in the south appear to make no pretension to the cultivation of these plants, and the best of them which were exhibited at this Great International Show would have stood a poor chance of a prize at any local country show in England. Pelargoniums and Scarlet Geraniums were very poorly grown, and equally poorly shown. There seems to be a great want of taste displayed in the training and setting-up of plants for exhibition, and those objectors to the excessive training and tying-in which is practised on the plants exhibited at our shows in England, if they were to come here would, we think, be so scared by the opposite extreme that they would gladly fall back upon the much-abused system of our English florists. Pansies were shown in great force, and they were shown well. These seem to be favourites among florists here, for there was an amount of pains bestowed upon their cultivation which we have never seen excelled, if even equalled, by English gardeners. They were not the English prize sorts, with round flowers and measured markings, but what we have seen called the Belgian or Fancy varieties. They were in pots, of course, and were strongly grown and carefully trained out, forming fine bushy plants quite a foot or more in height, and covered with bloom.

There were some good collections of herbaceous and alpine plants, but we expected to have seen them in much better condition and much more carefully set up than they were. From the close proximity to the Apennines and the Alps we expected to have seen something far better than we did see; we expected to see them more numerous, better specimens, and better cultivated. There was nothing tidy in the way they were set up, and many of them seemed as if they had recently been taken from their native habitats and put into pots anyhow. We do not wish to be hypercritical on an occasion like this, which is, we believe, the first on which Italy since it became a united kingdom has put forth so great an effort; but we do think that in a case of this kind, where the material for producing a great attraction was so abundant and so close at hand, some trouble might have been taken to show the rest of Europe Italian native botany in a more attractive and satisfactory form.

The collections of Terrestrial Orchids was especially interesting, and to those who have few opportunities of seeing them, very instructive, especially those from the Botanic Garden at Pisa, shown by Professor Carvel.

#### FRUIT.

Considering the season at which this Exhibition has been held it was not to have been expected that the collection would be either extensive or attractive, and yet, notwithstanding this disadvantage, there was a very respectable show. We little expected to have seen Grapes of 1873 in a state of such excellent preservation, and so good in flavour; but there were, not a bunch or two only as a curiosity of some particular variety, but baskets full of various sorts, in such quantity as to indicate that there was no difficulty in keeping this fruit till the middle or even the end of May without the aid of water-bottles or any such contrivance.

The only Italian collection of the fruits of temperate climates was shown by Signor Carlo Gianelli, of Turin, and consisted of twenty dishes of Apples, ten dishes of Pears, and thirteen dishes of Grapes. The Apples were for the most part those

highly-coloured varieties which are cultivated in warmer climates than ours, and some of which were certainly very beautiful. They were remarkably well kept, and there was not a shrivelled specimen among them. Some were glossy, as if they had been varnished, but we did not find many the flavour of which had been preserved in such a degree as to render them fit for use according to our judgment. The flesh was fine and delicate, like that of the imported specimens of Newtown Pippin. Among the finest that we tasted were Regina delle Reinette, or, as we would call it, Queen of the Reinettes. It is a handsome fruit, rich yellow, and speckled with russet. The flesh even at this late season is firm, crisp, very juicy, and very finely flavoured. Reinette rossa pontata is also a very handsome fruit, somewhat Pearmain-shaped, of a fine deep red, and beautifully dotted with large fawn-coloured dots; the flavour of this was also excellent. Reinette Rossa di Gaveno is also a very pretty fruit, highly coloured, and speckled with russet dots; the flesh is firm, juicy, and richly flavoured. This and the Regina delle Reinette were the best of the collection. There was another which ought also to be specially mentioned on account of its excellent keeping qualities. It was called *Dette Lesna ovvero del Fulminc*, and is flattish, even, and regular in its outline, with a dull red all over it like that of Norfolk Beefing, striped with darker red, and stained on some parts with yellow. The eye is large and closed, and it is altogether a characteristic fruit. The flesh is very crisp and juicy, and the flavour has a perceptible sweetness which predominates the acidity. The other varieties were Calvilla rosa, Court pendu Chiodo; Verdoni di Fossano, a small ovate and angular fruit, with very firm and rather sweet flesh, and a long keeper; Calvilla rosso Sanguigno di Pinerolo, Court pendu rave di Fossano, Calvilla rosso di Pinerolo, Reinette di Spagna, Calvilla variegato, Court pendu dolce di San Bastiano, Calvilla rosso tardivo, Matano, Court pendu Aspro di Suesa, Apiola di Burianengo di Gasino, Rugine dolce, a handsome Russet, but rather too sweet; Reinette di Giachetta di Chiomonte, Apiola piccola (The Lady Apple), Apiola nera, Gracé de Pinerolo, Reinette Grenoble, Reinette de Spagna di San Bastiano, Reinette Liscie di Gaveno, Reinette prata agrimeita, Mela Carlo di finale lunge, which is a variety of Mela Carlo with a long slender stalk.

There were ten dishes of Pears, but they did not look so well as the Apples, neither were they. The best of all was one called Santa Rosa, a variety somewhat resembling the Old Colmar; it was very deliciously flavoured. If one could be assured that it would ripen as well in England as it does in Italy it would be a valuable introduction, but that is doubtful, and the probability is that it would take rank with Dr. Bretonneau, Morel, and many others, and instead of being eaten in the dessert would be consigned to the stewpan. The other varieties shown were the old French variety Lansac, in excellent condition; Martin Sec, not at all bad, though coarse; Bergamotte Buffo, Visbourg di Gaveno, and St. Germain.

The most striking feature of this collection was the Grapes, fresh and excellent in flavour, though not very plump in the berries. The black varieties were Gambe di Pernice, which is the best of all, and the richest in flavour; Nerane, also good, though not so much so as the former; Salva villano, Uva Grigia di Cumiana. The white varieties were Bianca Verdesse, firm, rich, and excellent; this was so fresh that it might be considered a new fruit; Verdesse di Oliglio, and Verdesse di Viarigi, but none of these were equal to the Bianca Verdesse.

The mode employed by Sig. Gianella in preserving the Grapes in this condition is to wrap the bunches when they are ripe in sheets of paper, laying them in small cases, and packing them in quicklime. It is a very simple process, and one well worth trying in England. There seemed to be no decay in any of the bunches, and we did not observe a single berry that was even mouldy.

From Belgium there was a collection of Apples and Pears, but they had suffered severely by the journey, all of them being more or less damaged. They were exhibited by M. J. Capenck, of Ghent, and consisted of varieties which are tolerably well known in England.

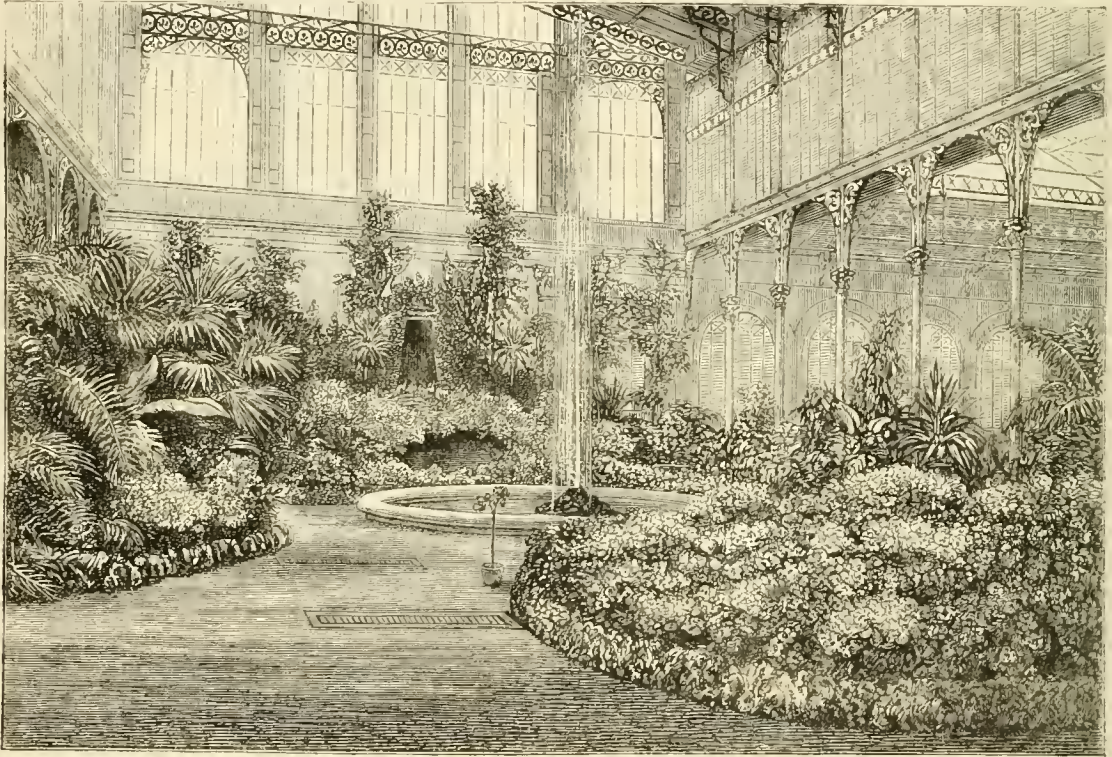
Australia furnished her contribution most creditably. A fine collection of Apples was sent from the Horticultural Society of Victoria, the beauty of the specimens rivaling the excellent condition in which they arrived. Some, of course, were damaged after so long a voyage, but the greater part of them were as fresh as when gathered. Among them we observed some incorrect nomenclature, but this was no doubt attributable to the tickets, which were not fixed to the fruit, being changed either in unpacking or in setting-up. This is to be regretted, as it would have added to the interest of the collection to have been able to observe the effect which climate has upon our home varieties. We detected some, however, although they were incorrectly labelled. One of the finest, if not the very finest, Court-Pendu-Plat we have ever seen was named Newtown Pippin, and the Newtown Pippin itself, sent by J. Smith & Sons, where it was correctly named, was equally beautiful as a specimen, excelling even those grown in America. The condition

and flavour of this were perfection. Gooseberry Apple (not Gooseberry Pippin as it was labelled) was in splendid preservation, and appeared as if it would keep for months to come; Scarlet Nonpareil, from Mr. Carson, had grown out of all knowledge, and was a beautiful fruit. Some of the specimens of Mr. Cole were also very beautiful, as were those of Mr. Charles Draper, of Hazel Glen.

Among other contributions from Australia were specimens of fruit of the Jack, *Artocarpus integrifolia*, large and in fine condition; the Nutmeg, the Cashew-nut, and the Mango. These were brought by Mr. Charles Moore, of the Botanic Garden, who arrived by the overland mail on the day of opening the Exhibition.

The fine collection of Oranges, Lemons, and Citrons from Athens, exhibited by Professor Orphanides, and which we reported upon at the Paris Exhibition of 1867, and the St. Petersburg one of 1869, was shown here. We have not space to remark

upon the whole of the varieties individually, for there were forty-two dishes in all; they were, however, very fine, and added much to the interest of the fruit department of the Show. Signor Fratelli Conti, of Florence, had a fine collection of twenty-two varieties of Lemons, and it was interesting to observe how great difference there was between them in size, thickness of flesh, thinness of skin, and flavour. The finest of all is the Limone di Firenze, a large handsome fruit, extremely succulent, and very finely flavoured. It may seem strange to some of our readers that we should speak of the flavour of Lemons, when to them all Lemons appear to be alike in this respect; but to taste them in places where they are gathered fresh from the tree there are many distinguishing characteristics which are to be noted as there are among other fruits. Another fine fruit is a smaller one, roundish oval, and with a very thin skin; it is called Limoncello, and is a very fine variety, and the skin is so thin the fruit is translucent when held up between the eye and the



INTERNATIONAL HORTICULTURAL EXHIBITION AT FLORENCE.

light. The Bergamots are not eaten, the acid being rough and harsh. These are cultivated solely for the essence which is drawn from the skin by distillation; and this brings us to notice a fine collection of thirty of these essences taken from different plants, exhibited by Signor Cesari Augusto Stefani, Sta. Maria Novella, at Florence. Before leaving this part of the Exhibition we must notice a good collection of artificial fruit, exhibited by Signor Francesco Garnier-Valette, of Turin. These were admirable representations of the varieties, and not only were they so in form and colour, but the weight of each was so regulated as to correspond with that of the natural fruit. What struck us most among these artificial fruits was the remarkably close imitation of the Gooseberries to the natural varieties. Even by a steady examination of them the eye might easily have been deceived. The venation, the transparency, and the appearance of the seeds through the skin were admirably well managed.

From the Munich garden there were some good fruit of forced Strawberries and Raspberries.

#### VEGETABLES.

Of vegetables there was nothing at all remarkable. The Bavarian Horticultural Society of Munich sent a collection consisting of Cabbage, Kohl Rabi, Cauliflower, Lettuce, Endive, Turnips, Carrots, Radish, new Potatoes, Asparagus, Jerusalem Artichokes, Mushrooms, and Cucumbers. If some of our gardeners had seen this collection they would have

turned up their noses at these productions. The Cauliflowers were not as big as Drumhead Cabbages, nor the Cabbages rivalling in dimensions the capacity of a bushel measure. The Cucumbers were not 36 inches long, nor the Lettuce the size of a Battersea Cabbage. The Carrots were not like Mangold Wurzel, and the Kohl Rabi was not larger than a good-sized fist, and yet there was nothing but what any gentleman would have desired to see on his table, well satisfied with the skill of the gardener who produced them. We doubt very much if it is desirable to encourage the excessive cultivation of vegetables which is becoming so prevalent in England. Large Cabbage and Cauliflower, long Carrots and Cucumbers, big Potatoes, and monstrous Lettuce may be all very well to look at and to excite amazement, but who is there among us possessed of any good taste at all would care to have such things on the table?

#### STOKE ROCHFORD.

This fine seat of Christopher Turnor, Esq., is situated close to the Great North Road, and about six miles from Grantham. The mansion is a very handsome building erected by Mr. Burn, the architect, in 1845. It contains many fine rooms, but the most important is the large library, from which a door opens into the conservatory. The Turnours have for more than two centuries been lords of the manor. Sir Edmund Turnour, the

loyal and charitable, erected a mansion here about the year 1650. This was pulled down, and another residence erected, partly with the old materials, in the year 1794. This was superseded by the present noble mansion. Within sight of the entrance to the mansion, on rising ground, is an obelisk 60 feet high and 18 feet square at bottom, with the following inscription—

In honour of  
SIR ISAAC NEWTON,

Who was born in Woolsthorpe, a neighbouring hamlet, and acquired the first rudiments of his education in the parish of Stoke. This obelisk was erected by

CHARLES TURNER, A.M., F.R.S.  
A.D. MDCCCLVII.

May the inhabitants of the surrounding district recollect with pride that so great a philosopher drew his first breath in the immediate neighbourhood of this spot, and may such feelings be long perpetuated by this

monument, which records the veneration of posterity for the memory of that illustrious man.

Upon the mantelpiece of the room in which Newton was born at Woolsthorpe is placed a marble tablet commemorative of the fact, beneath which are Pope's lines—

"Nature and Nature's laws lay hid in night;  
God said, 'Let Newton be!' and all was light."

Much might be written about this great man, who first discovered the law of gravitation through observing an Apple drop from a tree. In the library is a chair made from the wood of the Apple tree which first led to the grand discovery by Newton. However, I shall leave the mansion and turn to the gardens and pleasure grounds, as it is of them that I wish to detail a few particulars.

Adjoining the mansion there is a large conservatory full of



FLOWER GARDEN, STOEK ROCHFORD.\*

fine plants. Amongst others I noticed fine plants of *Cytisus racemosus* well covered with yellow flowers; *Brugmansia sanguinea* planted out in the borders, this is very conspicuous, having fine dark trumpet-like flowers (this plant is one of the largest in England); *Polygala latifolia*, large bush; and some noble plants of *Dicksonia antarctica*, the New Holland tree Fern. Trained up the pillars were a number of large Fuchsias, which have a very good effect when treated in this manner. *Bignonia Chirere*, one of the finest climbers we have: this is growing freely. There are also some fine pots of *Aspidistra lurida*, a Chinese plant with handsome variegated leaves. In the season there are many very fine plants of Azaleas introduced here when they are in flower. Near the conservatory are the flower gardens, which were planned by Nesfield. There is a Box garden, and on the west side of the mansion is a flower garden well filled with spring flowers; in it there are some very handsome variegated Holly trees, which add much to the effect. By the sides of the principal walk are planted a great number of very large standard Portugal Laurel trees like real Orange trees. There is a very pretty Rose garden with Box edgings round the beds, a croquet ground hidden with Yew hedges, with the turf of faultless smoothness. In the pleasure ground are some fine plants of the broad-leaved Holly;

*Pinus excelsa*; the lofty Bhotan Pine, good plant; *Picea Pin-sapo*, of dense growth and very healthy; *Abies orientalis*, about 12 feet high, good healthy plant; a weeping Yew grafted on the common, very interesting and pretty; *Pinus Lambertiana*, good; fine trees of Cedar of Lebanon, and also of *Cedrus Deodara*, or Indian Cedar, a noble plant: towering above others *Cupressus virginiana*, or Red Cedar, from 60 to 70 feet high; *Thuja borealis*, a fine compact variety; *Picea Nordmanniana*; *P. nobilis*; *Thuja glauca*, very fine; and a great number of Irish Yews, some of them 20 feet high. In the pleasure grounds, but hidden from the mansion, Mr. Dell has built a pretty hardy fernery. It is under a glass roof. Stone arches lead to it. The walls are hidden with stones of all shapes and sizes. There is no means of heating, so the Ferns all are of a hardy nature, but in great variety: all is in good taste and keeping. This must be a very pleasant retreat in a hot summer day, and is no doubt much appreciated. The pleasure grounds, gardens, and walks were in excellent order, and everywhere bore evidence of a liberal employer, and also that Mr. Dell is a lover of his profession.

The kitchen garden is reached from the mansion through the grounds and park, over a bridge on each side of which are ponds of bright and clear water. At this point, in taking a view of the surrounding scenery, one might fancy himself in Wales or in Scotland and not in Lincolnshire, which is

\* From a photograph by Consins & Priest, London Road, Grantham.

famed for flatness and fens. The scenery is of a very pretty undulating character between the grounds and kitchen garden. The pleasure grounds are not very extensive—about seven or eight acres—but from the pleasing manner in which they are laid out and planted one would fancy they occupied a much larger space of ground. The kitchen garden is rather disappointing, hardly what might be expected from the style of the mansion and the houses in the village, which are models of their kind. There is a stream of water which passes through the kitchen garden, and by the side of this water Mr. Dell has planted a quantity of *Phormium tenax*, or New Zealand Flax. It seems at home and is growing freely; it is very useful for tying plants or fruit trees, being extremely strong and durable. Among early crops I noticed a good breadth of William I. Pea, which is spoken highly of for early work. As a Lettuce for spring and winter use nothing is found equal to Hicks' Hardy Cos. Strawberries are largely grown, President and Alice Maude are the sorts depended upon for large supplies. Apricots on walls promise to be a moderate crop. Apples, Pears, and Cherries are showing well. The glass erections are very much scattered, and although there is a good number of them they have not such a neat nor imposing effect as they would have if they were more compact. There is a number of Bolton's plant protectors made use of; they are handy for Lettuce, Cauliflowers, early Carrots, and also for hardening-off bedding plants. Great numbers of plants are required for the flower gardens. Among plants grown by the thousand are Golden Feather, Alternantheras of sorts, *Mesembryanthemum cordifolium* variegatum, Geraniums Lady Plymouth, Christine, Mrs. Pollock, Triomphe de Stella, Bijou, and a new sort called Striking, with a dark horseshoe leaf.

The first vinery we will name is a late house, 15 feet wide, 30 feet long, planted with Alicante, Trebbiano, Bowood Muscat, and Madresfield Court, all showing well. The Vines in this house are strong and promise some large bunches. The hot-water pipes in this vinery are laid flat all over the surface of the house, and are considered to answer better than when they are all placed in front, as in many houses. The next is a span-roofed house, 100 feet long by 18 feet wide, divided into three, with a path down the middle. The first is used as a vinery and planted with Lady Downe's and Alicante—these are young healthy Vines, giving every promise of splendid crops. In the middle division are Cucumbers and Melons, Cucumbers on the north side doing well, sort Telegraph; these bear well all the winter. They are planted out, but are only allowed about 4 inches of soil to grow in, by placing slates below the soil, so that the roots cannot enter the bottom material. Stimulants can always be given in the shape of rich surfacings. Melons are grown on the south span on the same principle. After they are set rich surfacing is made use of, and by this means the fruit quickly attains a large size. At the end are Alicantes again and young Vines of Muscats, all looking uncommonly healthy. In front of this range is a frame, 100 feet long by 12 feet wide, in divisions, heated by hot water, used for striking cuttings, growing on young plants, forcing Kidney Beans, Strawberries, &c. In all the houses there is a great quantity of shelves for Strawberries, of which about two thousand are forced every year. Alice Maude and President are the two most depended on for a supply.

Going from this range of glass towards Mr. Dell's house there is another range. The first is a span-roofed greenhouse, in which are some magnificent plants of Azaleas well-grown and neatly trained, Heaths, Camellias, and others. The next is a span-roofed stove, used in winter for forcing flowers to supply the conservatory. In the back yard is placed a span-roofed greenhouse, in which are numbers of useful plants such as young Azaleas, Heaths, &c., and near to this is placed a small plant stove. Among other useful plants there is *Dracena nobilis*, a small-growing variety with pretty red leaves; *Davallia Mooreana*, a fine, large-growing new Fern; *Asplenium Belangeri*, and many others suitable for dinner-table decoration. There are also frames for bedding plants, Strawberries, Potatoes, Carrots, Radishes, and such like.

In the gardens there is another range of glass, in which are two Peach houses, each 50 feet long, with fine crops of fruit; also a Fig house, 25 feet long, with young bushes of Fig trees planted in square boxes in front made of bricks; a vinery, 30 feet by 16 wide, principally Black Prince and Black Ham-burgh; an early vinery, 25 feet; another vinery, 30 feet by 16 wide, planted with Muscats, all showing well. Mr. Dell the skilful gardener may well feel proud of such a well-kept place. All was in good order, and characterised by great neatness

everywhere. There is abundant evidence everywhere that Mr. Turner takes great interest in the comfort of his servants and dependants. Mr. Dell's pleasant house is a proof of it, well situated, and commanding a good look-out over the gardens. This is as it ought to be, but in many places the gardener's house is placed in any out-of-the-way corner.—J. SMITH, *Exton Park Gardens, Rutland.*

## NOTES AND GLEANINGS.

EVERY gardener must have seen the flowers of a whole row of the yellow Crocus cut off at one and the same time. Many have maintained that it was done by a night frost, but we always believed that it was the work of SPARROWS at break of day, before the gardener was at work. This opinion is now confirmed, and the same devastation committed on other flowers and by other birds is proved. Many communications on the subject are published in *Nature* from perfectly reliable witnesses. One gentleman testifies to the sparrows destroying the yellow Crocus, but he never noticed that they destroyed the white or blue varieties. Others have seen sparrows and finches similarly nip-off the flowers of Primroses and Polyanthuses.

— THE Fruit and Flower Show of the NORTH OF IRELAND HORTICULTURAL SOCIETY, to be held in August, ought to be successful, for the prizes are offered to every class, from the cottagers to the extensive growers of the rarest plants. We will quote but two instances. The Lord-Lieutenant gives a £10 cup for the best eight bunches of Grapes, and C. M'Garel, Esq., £20 for a dessert of twelve kinds of fruits.

SERMONS IN STONES.—We have the following from an American contemporary:—"A nut dropped by a squirrel fell through the opening in the middle of an old millstone which lay upon the ground, and, being thus protected, grew into a thriving sapling that shot up through the opening. In a few years it had increased so that it filled the space and was firmly wedged to the sides of the heavy stone. Still it grew, and in a few years more, little by little, it lifted the entire weight clear from the earth, so that a man could sit beneath it. All was done by atom after atom, borne by the sap to the growing trunk. Think of this, my little man, puzzling over 'long division' in arithmetic; little by little of thinking and working will take you through fractions, rule of three, and those terrible problems at the end of the book, by-and-by; but be sure that the little by little is not neglected. And you, hardworking lad on the farm, or in the shops, look at Franklin, Watts, Morse, Field, Lincoln, Grant, and thousands more who have lifted the weight of circumstances that would hold them down like millstones, and who have by their steady perseverance risen above their fellows, easily bearing their burdens; and 'keep pegging away.'"

## NOTES ON VILLA AND SUBURBAN GARDENING.

THE planting of all properly-prepared *bedding stock* may now be proceeded with under favourable circumstances. Begin with *Calceolarias*, *Verbenas*, Scarlet Geraniums, &c., leaving *Heliotropes*, *Lantanas*, *Anagallis*, and such things as are injured by frost until the planting of the hardy kinds is completed. If the arrangement is on grass, warm colours, as scarlet, purple, orange, and their shades should prevail; but on gravel, which is a warm colour, the cold colours, as blue, yellow, and white, which for gardening purposes take the place of green, would have to be placed in the beds containing warm colours, and *vice versa*. Colours thus arranged will have a far more imposing appearance than when thrown together at random. Hence each colour has its contrasting one close by, as scarlet and white, purple and yellow, orange and blue, and so on of their different shades; and while they mutually enhance the brilliancy of each other, the group, as a whole, is far more imposing than it could be under an indiscriminate mixture.

In the planting of plants in groups there are three things which deserve particular notice. First, to place all the plants with their tops pointing to the north; secondly, to plant all strong-growing plants very shallow—that is, with the ball little more than covered with soil; and thirdly, to plant weak-growing plants deep, so as to make them grow luxuriantly.

These rules, simple as they are, are of considerable importance, for if plants are not placed with their tops to the north the points of the shoots when pegged-down will not assume an erect position; while if luxuriant plants are planted deeply they grow still more luxuriantly and flower but little; and if delicate-growing plants are not placed deeply the roots get parched-up and they quickly perish.

After the plants are put in the beds should receive a thorough soaking of pond water, so as to make the soil almost like a puddle, and then the following day be hoed and raked over, so as to leave the surface loose. The plants may then be pegged-down, and will require little more attention unless the weather is very dry.

Recently-transplanted shrubs and trees must be carefully attended to with water until they get fairly established. It is frequently the case, however, that too much water is given at the root, thereby souring the soil and rendering it uncongenial to the young rootlets and the after-growth of the plants. The soil should be kept moist, but not to saturation, and the plants as soon as the weather gets warmer might be watered overhead with the engine on the evenings of bright days, which will be of vastly more service in repairing the loss sustained by evaporation than if given in excess to the soil while there is a deficiency of active rootlets to absorb it. Where Roses are infested with the grub it will be necessary to go over the plants frequently to destroy the pest. Green fly is also very troublesome at this season; a good washing with the garden engine on two or three successive evenings will greatly assist in getting rid of this destructive pest, but this must be done after all danger of frost is over. Persevere in the destruction of insects on fruit trees, in order to afford the young shoots a fair chance of making healthy growth; also proceed with disbudding and stopping gross shoots. Look after the caterpillars on the Gooseberry trees; the quickest way of getting rid of this pest is to give the trees a heavy washing with the garden engine, throwing the water against the under sides of the leaves, which will wash off the caterpillars, and they are readily killed on the ground by means of an iron rake.

Every spare half hour may now be profitably employed in killing weeds and stirring the ground among growing crops. Vegetation, which has been so long checked by cold north-easterly winds, is now beginning to make rapid progress, and weeds, like other things, grow apace; they therefore require sharp looking after in order, if possible, to prevent them from flowering and seeding. Planting in the kitchen garden should now be done in drills. In this way the plants are more effectually watered, and the first hoeing, by filling-in the drills, acts as a slight earthing-up.

*Brompton Stocks.*—Two sowings of these should be made, the first about the middle of May, and the second about the 21st of June. Sow in beds of rich sandy loam in an open situation; and about the end of August, if the weather is moist, or in the beginning of September, transplant them into a border, placing five in a patch; at the same time pot-off a store to be kept in a frame over the winter for planting-out in spring. Use 6-inch pots for the purpose, which should be filled with good loam mixed with a little rotten dung. The more airy the situation is, and the drier the plants are kept in dull weather the better they will succeed. Plants that survive the winter in the borders are always finest, but those kept in pots are well worth the trouble. Seed three or four years old is better and more likely to produce double bloom than that of one year old.

Tender Roses that have suffered from the effects of the past winter will now require to be pruned. Standards would likewise be much improved by giving them a good soaking with dung water, it is best applied in cloudy weather. Such herbaceous plants as *Pæonias*, &c., that soon come into bloom should be tied-up. Divide and transplant *Hepaticas*, and strong-growing plants of *Double Scarlet Lychnis*, or take some cuttings close to the root and plant them in a mild frame-heat in small pots, these will soon strike root and be fit for planting-out in the borders. Harden-off carefully tender annuals and other plants, and continue potting-off annuals and struck cuttings as they require it, putting in scarce sorts for stores. If cuttings of choice rock plants, such as *Phlox setacea*, *nivalis*, *subulata*, *verna*, *procumbens*, and *amœna*, with *Saponaria ocymoides*, *Onosma tauricum*, *Alyssum saxatile*, *Iberis sempervirens*, &c., are put into prepared cutting-pots in sand and placed in a mild frame-heat and treated as *Verbena* cuttings, they will soon strike root and be fit for planting-out or potting-off as may be required.

If green fly appear on *Carnations* dust them with Scotch snuff, or brush-off with a camel-hair pencil. Put all the sticks in the pots, and attach stems that are beginning to spindle. Continue to put in the side shoots of *Pansies* as cuttings. *Dahlias* may in some situations be put out, sheltering them during the night for the first ten days.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

A WRITER in one of the daily papers has something to say about the "cold week in May," and seems to imply that as a usual thing the temperature is much lower than one would be led to expect from the increasing height of the sun in this month. We have certainly had two extremely cold weeks—frost almost every night. Acres of early Peas in blossom have been ploughed-up in Essex, to the heavy loss of the growers. The weather has tested the comparative hardness of the different sorts of Peas. *Taber's Early Perfection* (the best stock of Sang-

ster's No. 1) is uninjured, while *Laxton's Alpha* has suffered. *Carter's Blue Peter* and *Laxton's William I.* were not so much exposed as *Alpha*, and they are not materially injured. *Potatoes* in exposed positions, or wherever they were not thoroughly sheltered from the east winds, are blackened. Under a wall facing west we have *Myatt's Prolific* and *Veitch's Ashleaf*; not a leaf is injured. On south borders the *Potato* is slightly injured.

### KITCHEN GARDEN.

Recently allusion was made to planting Cauliflower plants out of boxes. On Thursday the wind changed, and by Friday morning had worked round to the west; this gave us a chance to get the plants out into drills, planting carefully, and saving all the roots during removal. Have also been sticking successional crops of *Peas*. We must always cover with *Pea-protectors*. A useful appliance is now made of galvanised wire netting for this purpose. The netting is bent in the form of a half-circle, and is sold in lengths of 3 feet at the moderate price of 9s. per dozen. Where sparrows are plentiful no garden should be without these protectors. With care they will last for the best part of a lifetime. When the *Pea* plant reaches the top of the protector it will be time to remove them, and if the sticks are put to the *Peas* at once the birds seldom attack them, at least to an injurious extent.

We have been cutting a good supply of *Asparagus*, but the quality is indifferent. Though the frost has not been severe enough to kill the young heads, it has seriously impaired their quality. With genial weather and a warm shower it would be all right. Planted out a few rows of *Celery*. Early planted, this has a tendency to run to seed in the autumn, but this may be prevented by managing the plants well. They must receive no check, which they often do when sown in boxes in a hotbed, and then removed to a cold frame or hand-light without being careful to do it in warm weather, and also not keeping the lights close for a few days. *Scarlet Runners* had come through the ground, and the plants would undoubtedly have been killed if small pots had not been placed over each. Some new sorts of *Potatoes* were saved in the same way. It is easy to do a hundred or two plants, when a whole quarter must be left to take their chance; but the advantage of being able to dig *Potatoes* a fortnight earlier from the plants protected will well repay any extra trouble required.

### FRUIT AND FORCING HOUSES.

*Pineries.*—The first fruit, a *Queen*, was ready to cut last week. In the house started in January it has not been necessary during the last few weeks to shade the plants in the fruiting house, but it is needful when the weather is hot and scorching, as fruit that is ripe or ripening is readily injured by the sun. If only a few plants require to be shaded, the best way is to place a newspaper over them, not close on the crown of the plant, but raised above it. Should it be necessary to shade the whole, this is best done by a blind fixed on a roller outside; it should only be used during hot sunshine, and not before 10 a.m., nor after 3 p.m. There is not much required in these houses at present, except to see that the fruit is ripened-off with a good flavour. By the time the fruit is ripe the plants ought to be rather dry at the roots, and no more water is required until the fruit is cut. It ought not to be left in the fruiting house after it is ripe; the most convenient way is to cut it with a good stalk, and hang it up in a cool fruit room. Newly-potted suckers must be kept growing freely.

*Cucumber and Melon Houses.*—The only way to have plenty of crisp young Cucumbers is to keep the plants in healthy growth; and to do this, if the same plants are continued in bearing all the year round, fresh mould must be occasionally placed to the roots. This is done by forking away the surface soil, but not to injure the roots to a great extent; the surface is then dressed with a compost of turfy loam and rotted manure in equal parts. The best Cucumbers are obtained if the plants are not more than six months old. A great depth of soil is not necessary for them; 20 inches is quite deep enough. Plenty of drainage underneath is also of much importance; it drains the bed and prevents overwatering. Melons are approaching the ripening stage. As the plants are trained to a trellis overhead it has been necessary to secure the fruit from falling by fastening square boards, with a hole at each corner, under the fruit. Without this precaution the fruit would drop on the surface of the bed and be injured. Red spider should be thoroughly dislodged from the plants, as it seems to spread more rapidly on the *Melon* than it does on any other plant; leaves and fruit are alike over-run as by magic. The fruit is improved in flavour by being cut and laid on the shelves in the fruit-room for a few days before using it. We also examine the bed a week or ten days before the fruit is likely to be ripe, and should it be dry, give sufficient water to moisten it to its entire depth; no more water will be required after this.

*Orchard House.*—A good deal of work is required here at this time, especially if, as is the case with us, a series of shelves are filled with *Strawberries*. In the first place, all the plants require plenty of water at the roots and syringing twice daily. The shoots on *Peach* and *Nectarine* trees require stopping. All

the trees cannot be done at once; it is therefore necessary to go over them, if possible, twice a-week, thinning-out the fruit at the same time. The young wood, or rather the young growths of this season, are often crowded too closely together; these must be thinned-out. No one who does not take much personal interest in the trees ever can do such work in a satisfactory manner, as close observation is necessary to success.

#### GREENHOUSE AND CONSERVATORY.

These structures are now in great beauty, the principal display being obtained from Azaleas and Pelargoniums. The first named are, perhaps, the most useful class of hardwooded plants we have, and within the last few years very many exceedingly fine varieties have been added to the list. They are still shown at the exhibitions in the metropolis, but the glory has departed. The magnificent specimens that were the great attraction at the early shows in June are not seen now, the plants are small but well flowered, and some of the newer sorts that have been exhibited this year are more brilliant in colour than we remember to have seen in previous years. The Azalea is also better adapted for forcing than any other plant of the same character. This renders it doubly valuable, as a continuous display can be kept-up from January until July; early in that month the latest-flowering sorts will be at their best. As soon as the plants go out of flower the seed-pods must be picked off, and the plants placed in a hothouse to make their young wood. The house may be as warm as a Pine house, it will answer all the better. Plenty of atmospheric moisture is essential, and the plants should be syringed at least twice a-day. Fresh roots are freely produced at this time, and the plants may be repotted with advantage. Sometimes it is necessary to repot the plants into the same sized pots as those in which they had been growing. It will not harm them in the least to take a chopper and cut an inch or two of the mass of fibrous roots from the ball all round. Those who are fond of scented flowers in their greenhouses should grow the Perpetual-flowering Carnations. We are never without them, and they are so varied in colour—white, flesh, pink, yellow, flaked red and rose, crimson, scarlet, &c. The plants that are grown-on for winter flowering will presently be turned out of doors, where they will remain until September.

#### FLOWER GARDEN.

The largest proportion of the bedding plants are put out. Of course they are well inured to cold, and are such that a few degrees of frost will not hurt—that is, if it is not a frosty wind; and, furthermore, our plants are well sheltered from the north-east, which makes a difference. We have planted *Ageratum*, *Calceolaria*, *Zonal Pelargoniums*, the scarlet and variegated section; *Lobelias*, and any other hardy sorts. *Heliotrope*, *Iresine*, *Coleus*, *Alternanthera*, and anything in the way of plants that two or three degrees of frost would injure, will not be planted-out for a week or ten days. For edging lines to small beds Mr. W. Paul's white *Zonal* with white-variegated leaves, *Avalanche*, is exceedingly pretty if associated with the dwarf blue *Lobelia pumila*. Some of the new *Verbenas* are also likely to be useful in the flower garden. *Blue Boy* is the nearest approach to *Purple King* in profusion of flowers, and the colour is very pretty.

Roses are making a very healthy growth and are almost free from aphid, which is to be wondered at with such drying winds as we have had; perhaps the frost at night has had some check upon them. It has been necessary to go over some of the bushes to thin-out the growths, so that the centre of the plant may be open sufficiently to allow a free circulation of air. *Gladioli* are making very strong growths and are not checked by the frosts. Some seedlings that were planted-out in March, after having started into growth, were subjected to 13° of frost with wind, and though the outerleaves were injured they started afresh and are now growing freely. Placing sticks to *Carnations*, *Picotees*, *Phloxes*, *Delphiniums*, *Liliums*, &c. Planted-out *Stocks* and *Asters* in beds and lines.—J. DOUGLAS.

#### TRADE CATALOGUES RECEIVED.

W. Knight, Hailsham, Sussex.—*Descriptive Catalogue of Roses, Geraniums, Fuchsias, &c.*

Louis Van Houtte, Royal Nurseries, Ghent, Belgium.—*Catalogue of Stove, Greenhouse Plants, &c.; also a Supplement to Hardy Perennials, Ornamental Trees and Shrubs.*

J. Linden, Ghent, Belgium.—*Catalogue of Stove and Greenhouse Plants, Orchids, Palms, Ferns, New and Rare Plants, &c.*

#### TO CORRESPONDENTS

"\* It is particularly requested that no communication be addressed privately to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions

relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

BOOKS (F. B. H.).—There can be no cheap book with portraits of our wild flowers and Grasses. The drawing, engraving, and colouring are costly and voluminous. Dr. Hooker's "Student's Manual of the British Flora" contains all you require except the plates. (*Berkshire Tyro*).—Our manual, "Fruit Garden for the Many." You can have it free by post if you enclose five postage stamps with your address. (J. F. N.).—"Kitchen Gardening for the Many" contains all that is needed about Asparagus culture. You can have it as directed to the previous querist.

PLUMS DROPPING (W. Bristol).—We fear the young wood was not fully ripened last year. If, as you suspect, the dry weather is the cause, pour an abundance of water into a semicircular trench 3 feet from the stem.

FLOWER-BED ARRANGEMENT (F. J. T.).—Selecting from the varieties you enumerate, we would not use the two *Geraniums* as you propose in the bed that is 24 feet by 10 feet, but would plant along the centre a mass of yellow *Calceolaria Aurea floribunda* 2 feet wide, surrounding it with a band half its width of *Coleus Verschaffeltii*, with *Lobelia pumila grandiflora* next, followed by *Master Christine Geranium*, enclosing the whole with an edging of *Echeveria glauca*; or, if you think the *Lobelia* of too dwarf a habit to prove effective behind the *Geranium*, transpose the arrangement by using the *Lobelia* for an edging, forming a little ramp close behind and inside it, on the face of which plant the *Echeveria*. This will impart a novel and pleasing effect by slightly raising the body or major part of the bed above the blue edging; then make a broad handsome band of *Coleus* next the *Echeveria*, with another of the yellow *Calceolaria* enclosing a centre of the pink *Geranium Master Christine*.

COVERING STABLE MANURE WITH EARTH (J. Shand).—It absorbs and retains the ammonia and some other of the fertilising gases emitted by the manure during its decomposition. In other words, it prevents waste, but nothing is created. If the earth is finally thoroughly mixed with the decomposed manure, of course then the whole would be alike; but if the decomposed manure were used separately, it would be found that a ton of it would be more fertilising than a ton of the earth.

ERYTHRINA GLAUCA (H. G.).—We know we are correct. It is the Bois immortel of some of the West India Islands. A plant 20 feet high is a tree, not a shrub.

MARANTA ZEBRINA SEED SAVING.—*CALADIUMS* (A Reader).—The *Maranta* will need to be kept rather drier than if you did not want seed, the flowers being artificially impregnated by taking the pollen of the stamens and applying it to the stigmas. In the same way you will have to proceed with *Caladiums*, taking the pollen from plants you wish to operate with, and applying it to the pistils of those intended to produce seed. The plants will need to have a rather drier atmosphere when operated upon, and also when the seed is ripening, as too much moisture at either period is apt to render the pollen ineffective in one case and to rot the seeds in the other. When ripe the seeds may be kept in sand in the stove, and sown then or in February, keeping moist up to that time; place in a good bottom heat, and cover with a close frame, or hand or bell-glass, removing it when the seedlings are well up. Equal parts of loam, sandy peat, and sand answer for sowing the seeds, which should be covered with fine soil. Pot-off the seedlings when they are large enough to handle, and grow them in brisk moist heat.

PLANTS DISEASED (F. W.).—The dots on the leaves of the *Achillea* is a fungus, probably *Puccinia glomerata*. There is no insect on the *Nectarine* leaves; they are blistered by stagnation of sap from cold. Blistering is common to the *Peach* and *Nectarine* out of doors, and there is no remedy but to keep the trees warmer. The worst of the leaves should be picked off by degrees, and as the weather becomes warmer the new growth will have perfect leaves. On the leaves of *Arabis* there is no insect, but a fungus—we think *Erysiphe depressa*, which will be overcome by a dusting with quicklime.

AZALEAS IN WINTER (A Constant Subscriber).—They grow in winter in consequence of their growth not being completed in the previous year and the wood being badly ripened. Moisture in winter would not make them grow unless accompanied by warmth, and that would only cause the development of the flowers or shoots formed in the previous season. If the bloom buds are defectively formed fresh growths are made very early in the year, and the plants usually flower finely another year.

CHESTNUT VARIETY (*Sydenham*).—The leaf of Chestnut sent me is the Silver-leaved Horse Chestnut (*Æsculus Hippocastanum foliis argenteis*). The Chestnut cannot be propagated from cuttings. The only eligible mode of propagation is by grafting on stocks of the common kind, or budding in July.

TRANSPLANTING PRINCE'S FEATHER AND LOVE-LIES-BLEEDING (B. B.).—They do not transplant well, but you may succeed if you take them up whilst young, preserving some soil about the roots, and watering after planting. Thin-out the plants if you wish for good specimens. They do little good when crowded.

VINES—ASPARAGUS—HEPATICAS—POT ROSES—GRAFTING (E. P. B.).—The shoots of the Vines not showing fruit should be stopped at the joint where the first tendrils are situated, or at the sixth leaf; in other respects they are to be treated the same as those showing fruit, which you will stop one joint beyond the bunch. To fill up blanks in an old Asparagus bed the plants may be lifted now with the roots entire, and soil along with them, covering the crown, or part whence the shoots arise, 3 inches deep. With a good watering at planting the plants will receive but a slight check. From now to the middle of June is the best time to perform this kind of transplanting; but the plants must be lifted and planted with balls of soil. *Hepaticas* in small pots from a nursery should be planted out in good, rich, light soil in the border where they are to remain. A border partially shaded is most suitable. Pot Roses done flowering should be placed outdoors in a sheltered position, not pruned until autumn, and during summer duly supplied with water. Before placing outdoors they should, if forced, be hardened off. It is now too late to graft most kinds of trees; but any that have not begun to grow, and for which inactive scions are secured, may be operated upon successfully after April.

PRUNING WALL PEAR TREES (Subscriber).—The trees have been badly managed for the last few years. We advise you now to cut the young wood back to three or four leaves, and where it is too much crowded thin the shoots out. In winter cut the most prominent spurs well back; these will not yield fruit the following season, but with summer pruning they will bear well the next year. The second winter a few more of the spurs may be

shortened back, and in this way you will, in the course of four years, get the trees into good shape. Nearly all the back volumes give directions for managing fruit trees.

**STRAWBERRIES FOR LIGHT SOIL** (*Idem*).—Keens' Seedling, President, Sir Charles Napier, Premier, La Constante, and Frogmore Late Pine. Treach the ground as deeply as you can if you cannot get down 2 feet. Add plenty of farmyard manure at the same time. See volume xxi., page 82, new series.

**VINERY MANAGEMENT** (*A Novice*).—Figs do better under the shade of Vines than any other fruit tree; if you have room plant Bourjasotte Grise and Brown Turkey Figs. Want of water at the roots would cause the Figs to drop. Thin the growths out if they are crowded, and should any gross shoots take the lead pinch their points out. If the Vine shoots are crowded thin them out; those that remain and show for fruit should be stopped two leaves beyond the bunch. The shoot enclosed would not have had any bunches on it this year; all that have not shown fruit now will not show this season.

**PINCHING FRUIT TREE SHOOT** (*Idem*).—If you do not wish the trees to increase in size, pinch or cut back the young growths to four or five leaves in June. If you wish the trees to increase in size quickly, only pinch the points out at that time. That would be the treatment for pyramids. For espaliers train the leading growths along the wires, and cut the side shoots back to three or four leaves. We cannot say what it is that is barking the old wood; watch at night with a lamp. It seems to be done by mice.

**FIGS IN POTS** (*A Constant Reader*).—It is of no use trying to grow Figs as standards in the open air. They will succeed in the orchard house grown in pots. They require a rich compost. Turfy loam four parts, one part rotted manure, and some crushed bones mixed with the compost are the best material for them to grow in. About the end of June, when the trees are rooting freely, the surface of the pots should be dressed with loam and manure in equal parts. The leading growths should be stopped at the fourth or fifth leaf. Syringe freely, and shut up the house early in the afternoon. It is not necessary to use very large pots. We have gathered excellent Figs from trees in 9 and 10-inch pots.

**ROSES INJURED BY INSECTS** (*W. Savile*).—They are a species of weevil, *Otiorynchus ovatus*. Your only remedy is to spread a white cloth beneath the tree on the wall; go at night when they are out feeding, and brush the tree with a hand broom. The marauders will fall on the cloth, and this repeated on two or three following nights will subdue them.

**TOMATO CULTURE** (*R. G. M.*).—The shoots should be thinned when they crowd each other, and if they show fruit plentifully no stopping need be resorted to. If the growths are gross, and the fruit or show for fruit distant, stop at the third or fourth joint, and to ensure the swelling of the fruit stop at the joint beyond the cluster, but not if fruit is there showing, as it is evident the plants are in a good bearing state, no stopping being required to induce fruitful growths. It is well to remove most of the large leaves, but do not make too great a clearance at once. Go over the plants frequently, stopping, thinning the shoots, and removing any large leaves which shade the fruit too much. There is no limit to the fruit that ought to be left on a plant, but a cluster of three may ripen in every square foot of surface; thinning should be confined to the small fruit, leaving the finest to ripen, say three on each cluster. Water abundantly and with liquid manure in dry weather. The question of cucumber-thinning is a difficult one, as so much depends on the vigour of the plants and extent of surface allowed to each plant; but as you say "ripen" we presume you want them for seed, and for that you will not require more than half a dozen fruit per plant, but if to cut when fit you may allow one fruit to every square foot of surface every ten days or a fortnight consecutively throughout the season.

**SELECT DAHLIAS** (*T. C.*).—The following are good and not expensive. *Show*.—Alexander Cramond, Andrew Dodds, Chairman, Charles Backhouse, Charlotte Doring, Criterion, Flag of Truce, High Sheriff, James Cocker, John Standish, Kate Haslam, Leah, Lord Derby, Lord Palmerston, Maid of Essex, Mrs. Henshaw, Ne Plus Ultra, Sam Naylor, Tolsin d'Or, and Umpire. *Fancy*.—Chameleon, Dolly Varden, Ebor, Fanny Sturt, Flossie Williams, Marquis of Lorne, Negress, Pauline, Queen Mab, Sam Bartlett, Sparkler, and Viceroy. You may obtain them through any of the florists who advertise in our columns. You will find full directions for culture in "Florists' Flowers," which you can have free by post from our office for 3d.

**ROSE LEAVES BROWN-BLOTCHED** (*E. S. Turner*).—Deficient supply of sap is the cause. Water the roots plentifully and once a week with very weak liquid manure. Mulch the surface over the roots, and keep on the mulching all the summer.

**NAMES OF PLANTS** (*N. W.*).—The Summer Snowflake, *Lencojum aestivum*. (*M.*).—We cannot name plants from leaves only, and much less are we able from a piece of a leaf. (*Constant Reader*).—*Viburnum Lentana*. (*Lieut. Col. W.*).—Not in flower; perhaps *Prunus virginiana*. (*Scar.*).—*Melica uniflora*. (*J. Morgan & Son*).—A sight of the flower is absolutely necessary. (*Mac*).—1, *Saxifraga hypnoides* var.; 2, *Claytonia sibirica*; 3, *Valerianella olitoria*; 4, *Saxifraga rotundifolia*; 5, *Phlox subulata*; 6, Send again. (*W. T.*).—*Lonicera alpigena*. (*O. M.*).—2 is a *Bouvardia*, but you must send better specimens if you want names.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### THE POULTRY-KEEPER.—No. 3.

#### THE PLUMAGE.

With the hen there may be three kinds of feathers distinguished—1, the large feathers on the wings for flying, and on the rump to form the tail; 2, the middle-sized feathers, which cover over the large feathers and are also found on the wing and rump; 3, the small feathers which cover the neck, the back, the sides, the throat, the shoulders, and a part of the wings. They are all of various sizes and forms in each of the three kinds of feathers. They are always in layers compactly covering those beneath them like tiles. We shall designate them by the name of the places they occupy, or the position they hold, and will refer to the engravings to render them easy to recognise (*figs. 6, 7, 8, and 9*). The letters of reference correspond with those of the four engravings, so that

if one explanation is hardly clear, it helps and is helped by the other.

A, The upper feathers of the head are very small in those fowls not tufted. They surround the skull.

B, The underneath feathers of the head are almost like bristles. They cover the cheeks in the space which separates the wattles.

C, The upper feathers and those at the back of the neck are short and lengthening lower down, forming what is called the hackle. They become longer between the shoulders, where they cover the beginning of those on the back and the commencement of the wings.

D, The front feathers of the neck extend from the top of the neck to the breast, and over the large feathers.

E, The feathers of the back forming a layer about 0m. 10. These feathers of the same nature as those of the neck but a little larger and form the saddle.

F, The feathers of the breast cover the entire length of the two breast muscles, extending beyond the breastbone on each side and uniting at its end. The whole forms what is termed the breast. These feathers conjointly with the feathers of the loins overlap those of the sides.

G, The feathers on the sides cover the loins, taking in the back as far as the rump, which they go beyond and cover the lower part of the feathers of the tail. They also cover the commencement of the feathers of the flanks, thighs, and abdomen.

H, The feathers of the flanks are light and fluffy. They cover the upper part of the thigh feathers and slip under those of the breast.

I, The feathers of the abdomen cover and envelope all this part from the end of the breast to the rump. These feathers are generally fluffy, of a silky nature, and spread out in a tuft.

J, The outside feathers of the thigh cover those of the abdomen and leg.

K, The inside feathers of the thigh are flattened and of a silky nature.

L, The outside and inside feathers of the leg stop at the heel, or in some varieties they proceed lower and form what are called ruffles or vultured hocks.

M, The feathers of the feet or sole are long, short, or entirely absent in the different varieties. These feathers are along the shank in either one or several rows. They are always on the outside part.

N, The feathers of the toes appear on the outsides.

O, The middle tail feathers envelope the rump, and cover the bases of the large feathers of the tail.

P, The large tail feathers are in a regular line of seven on each side of the rump, and form the tail.

Q, The outside feathers of the shoulder cover a part of the other feathers of the wing. They form the shoulder.

R, The inside feathers of the shoulder are small, thin, and slender.

S, The large feathers of the pinion form, when the wing is opened, a large arched surface, and are of different sizes. These feathers grow out of the under side of the pinion. They are partly covered by

T, The small outside feathers of the pinion. These feathers are of different sizes. They come on all the outside surface from the shoulder to the pinion. They begin quite small on the outside edge, and finish a medium size on the under edge.

U, The inside feathers of the pinion are close, middle-sized, and small, covering the bases of the large feathers of the pinion.

V, The large flight-feathers or feathers of the hand are large and strong, and are of most use to the bird in locomotion. They begin at the under edge of that which is called the tip of the wing.

X, The outside flight-feathers cover the large ones, they are stiff and well flattened on the others.

Y, The inside flight-feathers are some small and others medium-sized, cover the bases of the flight-feathers.

Z, An appendix called the pommel of the wing which represents the fingered part. It is at the joint of the pinion, and has some middle-sized feathers of the same description as the large pinion-feathers, and have some small ones to cover them. These feathers assist in the flight.

When the whole wing is folded, almost all the feathers are hidden by the large feathers of the pinion and middle external feathers. The classification of the feathers of the cock are the same as those of the hen, but the forms of some of them are different. With the cock the feathers which form the hackle are fine, fine-pointed, lengthened, displayed like a mane on the shoulders, and covering a part of the breast and the feathers behind the neck. Those of the back are very much of the same forms as in the hen. Those of the loins are also similar, but become larger as they approach the rump, hiding the abdomen and covering the thighs with pendant, long-pointed feathers. The middle feathers of the wing-coverts, without being pointed, participate of this nature. The middle feathers covering the tail change completely in form and size, being in the cock larger. They are of different proportions, and have all

a semicircular and drooping form. The two largest are called the great sickles, the others are called middle and small sickles.

There are different groups of feathers, of which the following is a description:—

**TOPKNOT OR CREST.**—A considerable tuft of feathers either pointed or rounded, either straight or drooping, placed on the

top of the skull, and differing in arrangement according to the breed.

**HALF TOPKNOT.**—Composed of the same kind of feathers, but less than the full topknot.

**TUFT.**—A little tuft of short feathers, firm, straight, or a little drooping, occupying the same place.

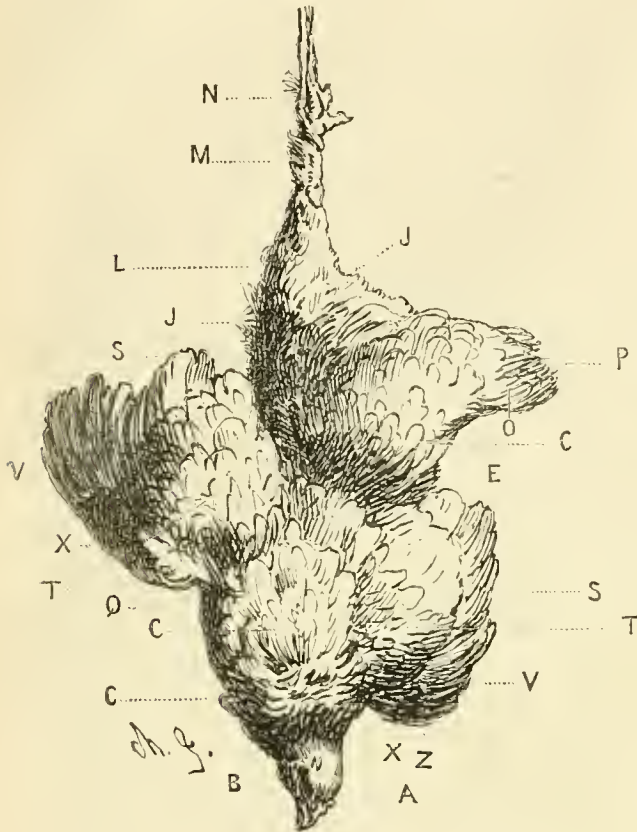


Fig. 6.

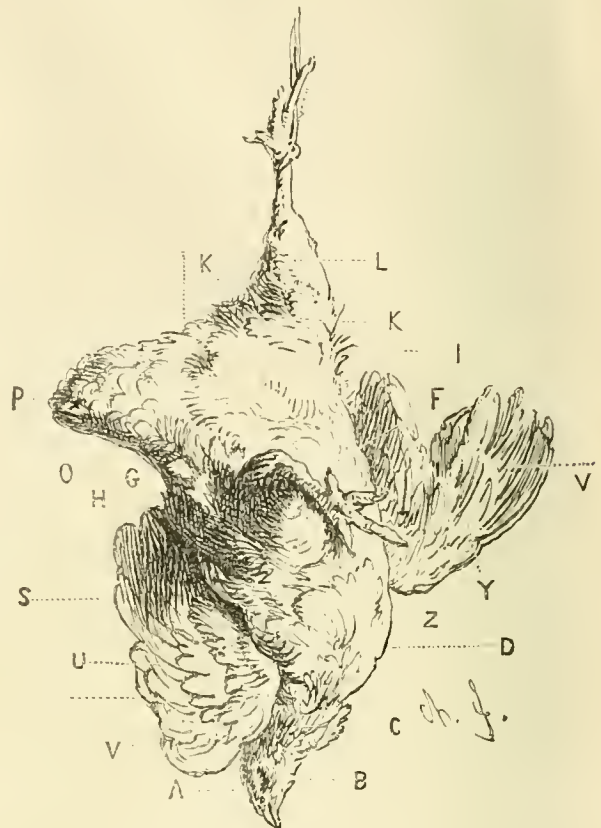


Fig. 7.

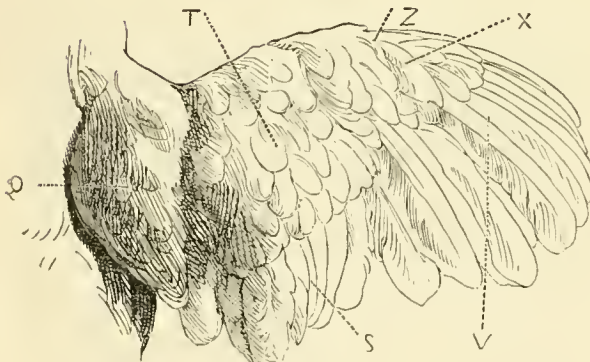


Fig. 8.

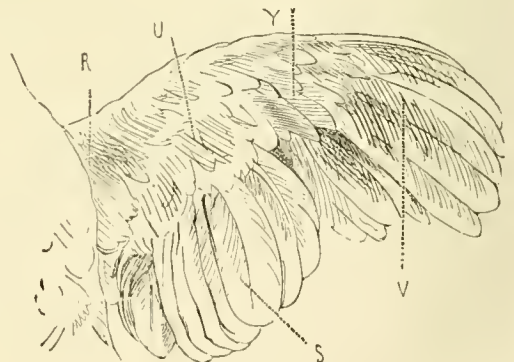


Fig. 9.

**WHISKERS.**—Tufts of small feathers pointed or rounded, generally turned up, which surround the cheek.

**CRAVAT OR CROP.**—Tuft of feathers more or less long and drooping, which commences beneath the beak and descends more or less the length of the neck.

**COLLAR.**—A tuft of feathers turned up, encircling the cheeks and re-uniting underneath the beak.

A variety of colours and patterns belong to each race, and are increased by combinations in crossings. However, with patience we may easily have an idea of the plumage of each variety, by examining separately a feather from each part of the body. We never find, it is true, a feather identically similar in its details to that which has been taken as a model, forasmuch as Nature never makes two objects exactly alike, but we may find in

feathers of the same part an analogy which constitutes on the whole a regularity, a pleasing conformity. We shall give in its proper place a drawing of the feather which characterises each part, and that will serve more clearly to identify the appearance of each variety.

### HYBRID OR MULE BIRDS.

THE subject of mule or hybrid breeding is one of great interest to the fancy. Authentic accounts have been obtained of some, while we have reports of others without authenticity.

At several poultry exhibitions the writer has noticed a hybrid said to have originated by crossing a Turkey hen with a Guinea cock. It has been illustrated in an agricultural paper, but the

likeness was so unlike the original bird that, placed side by side, it would not have been recognised.

An identical bird, though of different sex, came into the writer's possession about two years ago, and with much difficulty the former owner and breeder was found, and through him and his family a correct history of the origin of the hybrid was obtained. The accompanying illustration was drawn from it by the distinguished artist, T. Kirby Vanzandt, of Albany, N.Y. In the sketch he has succeeded in catching the spirit and attitude of this curious bird. It was presented to the Commissioners of Central Park, New York City, and if still living can be seen there.

Mr. Matthew Flausburgh, of Stony Hill, Albany County, N.Y., in 1865 obtained some Guinea eggs from a neighbour, but not having enough for a sitting, placed with them some eggs from the barn-door fowl; in due time they hatched and were reared together. The next year two of this brood, a Dominique cock and a Guinea hen, mated. The fact having been noticed by the family, the oviducts from their amours were preserved carefully and set with a few Turkey eggs. It is a known fact that hen eggs hatch in three weeks, and Guinea and Turkey eggs in four weeks. This fecundation so influenced the Guinea eggs that they hatched in three and a half weeks, while the Turkey eggs hatched in the time which is usually required for them. The chicks from the Guinea eggs presented a snuff colour instead of the striped appearance of the true Guinea young. Only three eggs of this fecundation proved fertile, two only living a few days, while one matured, as seen in the engraving.

Tegetmeier refers to this hybrid, and says that "they are true hybrids, being perfectly sterile and incapable of reproduction among themselves, or with either of the species from which they were derived." Its plumage is mottled, and sprinkled confusedly with brown, drab, and white, freckled with black, the white predominating, causing it to appear grey at a distance. It weighed 6 lbs., and stood 13 inches high.

The cusque of the Guinea fowl was absent, but it had small wattles and a loose pendant fold of skin under its gullet, which was thinly covered with feathers. Its voice resembled the Guinea, and it was exceedingly shy and timid. It had no affinity for domestic fowls, but preferred the society of Turkeys, having been reared with them. As the hybrid advanced in age the colour of its plumage grew lighter.

The Golden Pheasant sometimes crosses with the common domestic fowl. Its progeny is also a true mule, and, like the hybrid just described, cannot be further crossed.

In order to favour this production the Pheasant must have been bred among domestic fowls. The male Pheasant occasionally pairs with a favourite hen, providing he has none of his own species to mate with. It is usual for only a small proportion of eggs thus fecundated to prove fertile. The introduction of a Pheasant hen will immediately alienate the attentions of the cock Pheasant from his newly-made mate.

A friend who had succeeded in rearing this cross once stated that the cock Pheasant was exceedingly capricious, and would sometimes destroy several hens by picking them to pieces upon the rump before selecting one to his entire notion. Mr. Hewitt, who has given this subject considerable attention, describes the cross of the Golden Pheasant cock with five varieties of fowls—viz., Spanish, Game, Buff Bantams, Golden and Silver-spangled Hamburgs.

All of these hybrids were described as being exceedingly wild, with heads devoid of combs, wattles, or deaf-ear, with tails approaching the conformation of the Pheasant, but not so lengthy.

In size they far exceeded the hen producing them. In colour they were excessively darker than the hen which produced

them, while their shape conformed more closely to that of the Pheasant.

The hybrid bred between the Pheasant and Spanish hen at adult age was black, and of a dull sooty hue, with yellow eyes, and weighed nearly 7 lbs. Around the face, instead of being white, presented the velvety appearance peculiar to the Pheasant.

In the cross between the Black-breasted Red Game hen the scapular and breast feathers were pencilled with as much regularity as in the male Pheasant. The ground colour was exceedingly dark, and these pencillings were not visible. The face of this hybrid was plain and feathered to the eyelid. The eyes were of a deep hazel. Its weight was about 6½ lbs.

In describing the other three crosses, as much dissimilarity was observed as in those described. Mr. Hewitt remarks that the markings were as variable as they could be, and the birds as pugnacious as it is possible to imagine, and were always sterile and unsocial.

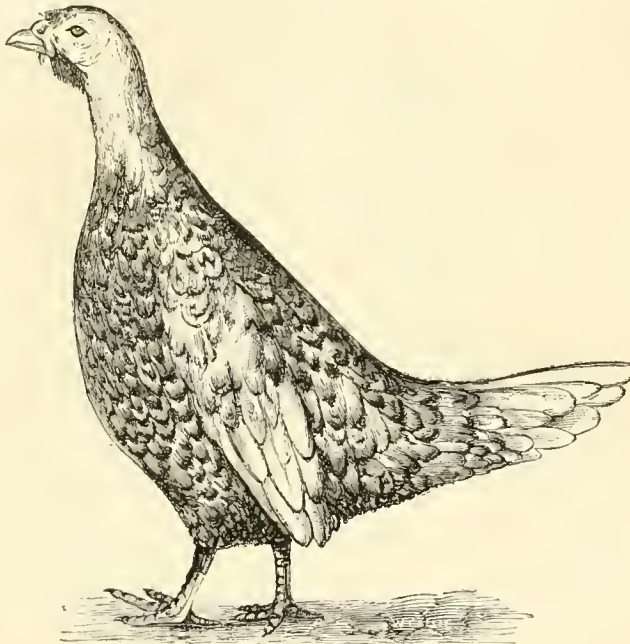
Another interesting hybrid is a cross between the Musk drake and the common Duck, which produces a mule of symmetrical form and of various colours. The results of the cross are only useful for table consumption, and when fattened far excel any other variety. They are also sterile.

A specimen of a cross between the domestic hen and Partridge cock was owned in this city by Mr. Charles. It was a hen, and weighed 2½ lbs. In colour it was yellow, finely pencilled with black, had a single comb, and was compactly built, and, as Mr. Charles remarked, was heavily meaty across the thighs. The flesh was quite dark, like the Partridge. Its legs were blue and slightly feathered. She resembled a young Game cock about the head. The feathers under the wings were heavily barred like a Partridge. The story is thus related in reference to the production of this hen:—Mr. James Sickles, of Long Island, owned an old yellow hen, which disappeared in the spring, he supposing that she had died. In the fall she returned with a brood of chickens, followed by a Partridge cock, who, when disturbed, flew in an adjacent tree-top. A hired man observing him, and not comprehending the

circumstance, shot at him, but, missing his mark, the Partridge disappeared and never returned. There were several other chicks in this brood, and every one of the cockerels manifested decidedly Game properties. One of them immediately engaged with a Game cock, and gained decided advantage, although destitute of spurs. This cross was very productive when bred with domestic fowls.—JAMES S. BAILEY, M.D.—(*American Fanciers' Journal*.)

## ROOSTING PLACES FOR CHICKENS.

ALTHOUGH, from various indications, I am inclined to think that I am considered an authority upon poultry, there are at all events one or two points upon which I am quite willing to admit that I should be glad to learn from others. It is said that Sir Walter Scott was always glad to seize an opportunity of talking with any of his countrymen, however humble his position, as he declared that every Scotchman could teach him something he did not know before, and the readers of his works, probably, owe much more to this habit of his than might at first be supposed. Now I am not anxious to be compared to the illustrious Scott, for when two are compared the weaker must go to the wall; but respectfully following his example, I can say that I am always glad to talk with those who are interested in poultry, and that I rarely come across anyone who cannot teach me something. Just now I am troubled about my early chickens; they have lost their mothers and have left their coops, so that I hardly know where to put them. If allowed to roost the result



A cross between a Turkey hen and a Guinea cock.

will be that they will be crooked-breasted, and judges will not often award a prize of any importance to a crooked-breasted bird. Some fanciers, I believe, accustom their young stock to roost on perches that are flat and some inches wide, but surely the youngsters keep as close to the edge as they can, and indent their breasts if possible. Others, again, allow no roosting places or perches of any kind, and prefer that their birds should huddle together on the ground. I have tried this plan, and in consequence have lost valuable chickens that have been either crushed to death or suffocated during the silent watches of the night. Some writers advise that fowls should be allowed to roost in the trees, but here again I am afraid of crooked breasts. Perhaps some more experienced fancier will be able to throw light on this subject and tell us what course he has found best to adopt. —PUZZLED.

**THE ROYAL COUNTIES (HANTS AND BERKS) AGRICULTURAL SOCIETY.**—The last day for entering horses, sheep, cattle, pigs, dogs, poultry, Pigeons, and Rabbits at the Society's Show is Saturday next, 23rd inst. From the preparations making in the show yard at Reading, it is evident the Society anticipates a large meeting.

### THE CANARY.—No. 1.

The Canary is now reared in almost every civilised country. More than three hundred years ago a ship sailing from the Canary Islands, laden with merchandise and a few Canaries, was wrecked on the coast of Italy. The birds escaped to the timbered lands near the coast, where they bred freely, and would have become naturalised had not the sweetness and brilliancy of their notes attracted the natives, who were possessed of so strong a desire to obtain them that by continually hunting them the wild breed became extinct. After this circumstance the captured birds spread rapidly over all Europe.

In a state of nature the Canary nests in shrubs on the banks of small streams, which are numerous in their native islands.

The original colour of the Canary was not like those of the present day, but of a brownish olive-green mixed with black and yellow. The present brilliant hues of plumage have been produced by cross-breeding with other birds.

Fanciers, by careful management, have instituted rules by which the arrangement of colouring of the Canary can be bred of any shade between that of the parrot-green, orange, and lemon; but still the original colour will appear occasionally, even when two lemon-coloured birds are mated together.

The Canary is now bred for this market principally in Germany, in the kingdom of Hanover, where the peasants make their chief means of subsistence by their breeding. Tourists are sure to visit the Hartz Mountains, the great bird-breeding mart of the world. While the United States receive their supply mostly from this locality, some are imported from France, Belgium, and Holland.

The song of the Canary has also changed under this process of cross-breeding. One accustomed to listen to their original notes would scarcely recognise in the modern bird the song of their progenitor.

The price paid by the importer varies, but is usually about one dollar each, according to the beauty of plumage and excellence of song.

German peasants manufacture small wooden cages in large numbers from fir wood, which grows upon the mountain sides. Some are dome-shaped and some are square, and about 8 inches long by 4 inches in height and width. Every bird has a separate cage, and every cage is made entirely of wood; pegs, instead of nails, are used to fasten them together. They are manufactured at the small price of two cents each.

It is estimated that about fifty thousand Canaries are imported annually into America. During the passage they require careful attention daily in feeding and watering. The cages are arranged in divisions, so as to allow the keepers to pass between them to feed the birds and clean the cages. If cleanliness is neglected, sickness is engendered, and many birds will perish in consequence. The usual cargo for a single ship consists of about four thousand birds.

**VARIETIES.**—There are three varieties known in America—viz., the German, French, and Belgian. The German are designated as the short, and the Belgian as the long breed, while the French are intermediate, and perhaps may have originated by a cross between the two varieties.

The German bird excels as a singer; the French bird ranks next. While the Belgian bird does not sing generally so well, it is so exquisitely formed that in the eyes of a fancier it more than compensates for its deficiency of song. Enthusiasts recognise in this highly-formed Canary ten points—viz., small flat head; long and slender neck; high and square shoulders; the back well rounded, so as to form a segment of a circle; general neatness of aspect and length of tail, inclining in a circle with the back; thinness and length of the bird; erectness and length of limbs; closeness of feathers; richness of colour. These are the points as given by Mr. Barnesy, an English

fancier. They recognise three varieties of the Belgian—viz., erect, roughed, and hooped. In this country the long French bird takes the place of the erect Belgian, and we only recognise the hooped bird as the Belgian. Choice specimens sometimes sell for \$100.

**COLOUR.**—The yellow and the mealy are the colours most prized, but it is considered that the mottled and green birds have the strongest constitutions.

In Europe the breeding of Canaries is reduced to a science. Societies are formed, which hold annual exhibitions and offer prizes for competition.

Enthusiastic fanciers recognise some thirty varieties, which are arranged under two divisions—viz., *plain* and *variegated*. The plain are designated as *gay* or *gay-spangled*; the variegated as fancy birds. The Jonque or Jonquil is a bright yellow bird; the Mealy is a pale yellow intermingled with white, which makes the bird appear as if sprinkled with meal; the Lizard is a green bird spotted with yellow, with a cap of a rich yellow colour; the highly-prized Cinnamon bird is so called on account of it resembling in colour cinnamon bark.

**DESIGNATION OF SEX.**—The male bird is the songster. The female scarcely ever sings; if so, their notes are weak and effeminate, and they never fill out under their throats while articulating notes, as do the males. The male has a short stout beak, and is wide between the eyes, with a flat head. The wider they are between the eyes the better. The crown of the head of the female is more round than the male.

**TO DISTINGUISH OLD FROM YOUNG BIRDS.**—The feet and legs of young birds are smooth and glossy; the toe-nails are short. Old birds have rough and scaly feet, with long toe-nails. It sometimes is necessary to trim the nails to prevent their being caught in the wires of the cage.

**MODE OF IMPROVING THEIR SONG.**—In Europe great attention is paid to improving the song of Canaries. The two modes are practised as follows: A large cage is constructed with close partitions, being divided into sections, which effectually exclude the view from each other. A superior singing bird—a Nightingale or Skylark—is placed within hearing, but out of sight. By listening to the beautiful notes they are taught to imitate. In six months they will have acquired perfection, when they can be removed to separate cages. Another method is: When young birds are first beginning to try to sing, they are separated from the parent bird to prevent them from acquiring the song of the old bird. The room is made quite dark, with just enough light admitted to enable them to see to eat. A musical instrument is constructed, called a bird organ, and is played for an hour each day in the room, in the hearing of the young birds. Nothing else attracting their attention, they become attentive listeners, and soon attempt to practise the song, which in the course of time they are enabled to perfectly repeat.

**FOOD AND MANAGEMENT.**—The food best adapted to their use is clear canary seed. Sometimes it is mixed with one-fourth of rape seed. Hemp seed should not be used, as it produces too much fat. Occasionally they should be allowed a sprig of lettuce or cabbage leaf, or a piece of apple. They should be fed and given fresh water every day. The cage should be kept clean, and the bottom of the cage should be sprinkled with gravel. This will supersede the necessity of cutting fish bone, unless it can be conveniently supplied.

**MOULTING SEASON.**—The moulting season takes place once each year, generally during September or October. The casting-off of plumage, and the formation of a new dress necessarily produces indisposition sufficient to cause them to cease their song. During this period especial attention should be given them; the temperature of their room should be uniform, and they should be free from draughts of cold air; the cage should be suspended 3 feet from the ceiling, in order to avoid the deleterious air and gas escaping from the combustion of coal.

**MATING AND BREEDING CANARIES.**—The mating of Canaries for breeding purposes requires instruction as well as experience in order to insure success.

Breeding cages can be obtained from dealers, suitably arranged for exercise, nesting, &c. They are provided with a shelf perforated with an opening sufficiently large to contain a nest (which is usually made of wire-gauze), besides perches, feed-cups, &c.

The cage should be hung at least a foot above your head, and should occupy a southerly aspect, if possible, and not be moved until the breeding season is over. Should a cage be used that had previously been employed for this purpose, it would be a safer plan to scald it with water made alkaline by baking soda, and then revarnished.

In selecting the pair, several things are to be considered: 1st, the desired sex; 2nd, colour; 3rd, the size and shape of the birds.

A young male and an old female mated together produce mostly male offspring, which is greatly to be desired. Males and females of about the same age mated produce about equal proportions of male and female young.

2nd. **Colour.**—To produce a handsome yellow bird, the male should be a Jonquil; the female should be a Mealy bird. Such

a union will usually produce pure yellow birds; while a clear yellow male mated with a green female will usually produce handsome mottled young. A very deep yellow male mated with a very deep green or brown hen often produces the highly-prized Cinnamon bird.

3rd. *Shape*.—In breeding for form much taste can be displayed. Some prize form more than colour or song.—JAMES S. BAILEY, M.D.—(*American Fanciers' Journal*.)

### RABBIT HUTCHES.

UNDoubtedly the most satisfactory system of keeping Rabbits is in hutches. Under this method the owner can at any time examine his stock, and make any changes he may think necessary. It frequently happens that a doe will have a litter of eight or ten; this is too many to leave with her, if the owner wishes large and healthy animals. If they are in well-arranged breeding hutches they are easy to get at, and the small and weakly ones may be taken out and destroyed; or the litter may be divided, part being given to a nurse-doe, provided one is in readiness.

After trying several different styles of hutches—some a simple dry-goods box; others got up quite elaborately with moveable zinc bottoms, to be drawn out and washed and scrubbed—I have designed and constructed a stack of twenty hutches, which I

This trough may be covered with a piece of board notched on the lower edge, or with wire-cloth of about one-quarter-of-an-inch mesh. I do not, however, consider this essential where plenty of litter is kept in the hutch; although I have them all covered in my own rabbitry. The floor of the upper tier is the same as *fig. 2*, leaving out the partitions *r r*.

The floors are of tongue-and-grooved pine or spruce, covered with two coats of paint. The ends and centre partition are of ordinary-faced pine boards 1 inch thick; the strips to which the fronts are hinged are of the same material, 2 inches wide; the frames of the wire fronts are 1 by 1½ inch; the wires are No. 8 gauge, tinned, and are placed 1 and 1½ inch apart in the buck's pen, and 1 inch in the breeding pen, to prevent the young from falling through. The outer doors of the nests are of half-inch boards. A hutch of this size will take about 80 feet of boards; 6 lbs. of tinned wire; four pairs of 1½ inch iron butt hinges; two pair three-quarter-inch brass butts; four 1½ inch cast iron buttons; and two 1-inch brass or iron buttons; about 1 lb. of eightpenny nails, one of sixpenny, and half a pound of threes; three dozen screws, three-quarter-inch No 9, and one and one-half dozen screws, half inch, No. 6; a piece of zinc 3 feet long and 2 feet wide, and a paper of ten-ounce tacks. The prices of materials will of course vary in different localities. A carpenter should build it in about two days.

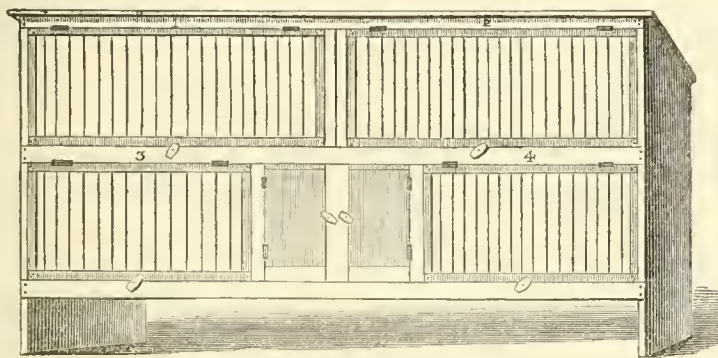


Fig. 1.

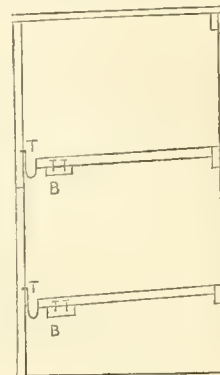


Fig. 3.

consider much superior to anything I have heretofore used, and which I think will fully meet the requirements of fanciers.

*Fig. 1* is a front view of a two-tier stack of hutches, divided into four apartments. In the upper tier, No. 1 may be used for the buck, and No. 2 for the weanlings. The lower tier are breeding hutches for the does. This stack is 6½ feet long, 3 feet 10 inches from floor to top, and 2 feet 2 inches deep, outside measurement. The hutches, Nos. 1 and 2, are each 3 feet 1½ inch long, 2 feet deep, and 15 inches high, inside measurement. *Fig. 2*

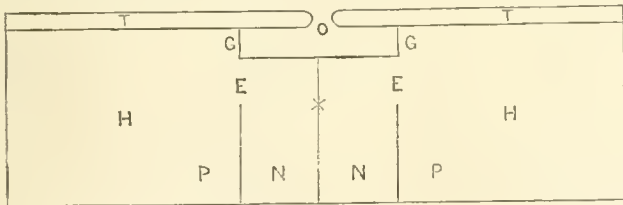


Fig. 2.

is a diagram of the floor arrangement of the lower tier. *h h* are the two pens for the does, each 2 feet 3 inches long, and the same depth and height as the upper tier. *n n* are the nesting apartments, each 10 inches wide by 17 inches deep; the partitions *r r* being of half-inch boards, leaving an opening at *e* 6 inches wide and 8 inches high, which may be closed with either a drop or slide door. *o g g* is an enclosed space 6 inches wide and 21 inches long, extending the entire height of the stack, and open at both top and bottom. *g g* are openings, 2 by 4 inches, covered with wire gauze, for purposes of ventilation, and are placed in each tier near the top or ceiling. *t t* are zinc troughs at the back of the hutch to catch the urine and carry it into a tub or earthen vessel placed under the lower ends at *o*. *Fig. 3* shows the descending floors with the beams, *a b*, extending the length of the hutch, and on which the rear ends of the floors rest. The floor is 2 inches shorter than the depth of the hutch, thus allowing the water to run into the trough *t*, which is also inclined, being 1 inch higher at the ends than in the middle at *o* (see *fig. 2*).

This arrangement presents many good points. The ventilation and drainage are as nearly perfect as can be; the doors being hinged at the top, when raised give free access to all parts of the main hutch, and the floors being level with the front are easily cleaned.

My own hutches are built four tiers high and five long, making twenty hutches in this one stack. The upper tier—five hutches—being used for stock bucks.

This article is already longer than I intended it should be, but I cannot close without giving a short description of the arrangement of my rabbitry, in answer to some ten or a dozen readers of the "*Bulletin*." My main room is 24 feet long by 16 wide; on the north side, beginning at the east corner, is the stack of hutches above mentioned, the top being 6½ feet from the floor; across the entire west end is another stack of hutches extending to the ceiling, 8½ feet high; the upper tier, however, are large square hanging pens, 3 by 4 feet, and 2½ feet high; these were built for penning young stock of two to five months old; across the south side is another stack of hutches, eighteen in number, three-tier high. In both north and south sides, above the hutches, are three sliding windows, covered on the outside with strong half-inch galvanised wire netting. The door is on the south side, a little to the east of the middle of the building; on the east end is a door leading into my greenhouse, and also the "spouts" which conduct the grain from the bins in the loft above. Through the floor above, and extending up through the roof, is a ventilating tube, which carries off any foul air which might accumulate in cold weather, when the windows are necessarily kept closed. In addition to these fifty-four hutches, I have another building with four large pens, each 5 by 10 feet, and also eleven portable hutches, and six sectional ones, all of which were in use, and crowded the past season.—A. M. HALSTED.—(*Pet-Stock Bulletin*.)

### ROUP.

In my first experience with roup, overcrowding was the sole cause. To the inexperienced let me say, Keep your coops clean and dry; do not expose your fowls to cold winds and dampness,

and be especially careful not to overcrowd them. Coal ashes, dry earth, or any deodorising substance frequently strewn over the droppings will be sufficient without often removing them. If you discover a fowl whose breathing is attended with labour, and the throat distends at every breath, remove it at once and apply some remedy, many of which are given in all poultry books and journals. Roup is easily cured in the first stages; I have often cured it by one application of kerosene oil to the head and throat, after giving one teaspoonful internally. Always give a diseased fowl all the sunshine you can. Roup is often accompanied by canker in the mouth and throat. In cases of canker I remove the white substance and apply pulverised alum with perfect success. I had a case not long since where the tongue, mouth, and throat were completely coated thick with canker, and a frothy substance issued from the mouth. Such cases I had always before considered incurable, and had not the bird been a valuable one, I should have used my old and sure remedy, the hatchet. In five days, however, he was entirely cured, the only remedy being a daily application of pulverised alum. I hope to hear from others on this point.—J. Y. BICKNELL. —(*American Fanciers' Journal*.)

**INCREASED CONSUMPTION OF EGGS.**—In the four months ended the 30th ult. the declared value of eggs imported was £871,492, against £830,325 in the same period last year.

### OUR LETTER BOX.

**FEATHERS FALLING FROM HEAD AND NECK (H. H.).**—As a rule there is no remedy for the loss of feathers, because it is difficult to trace it to its origin. Spanish and Houdans are both feather-eating birds when in confinement, but when, as you say, your fowls are in full enjoyment of liberty and a grass run, it is difficult to find a cause for it. Stimulating foods are bad for feathers, and a heated state of body destroys plumage. If you wish for a proof of this you will find it in the fact that a bird fed entirely on hempseed will become black; take Quails and Bullfinches as examples. Parrots fed on hempseed cannot moult wing feathers, and the failure causes such irritation that the birds eat away their wings. We advise you to rub the bare spots freely with compound sulphur ointment, to confine your food strictly to ground oats or barley meal slaked with water morning and evening, and to whole corn at midday. If they have their liberty over grass they want nothing more. If they have no green food in their haunts you must give them lettuce and grass cut with plenty of fresh earth. If they have no dust in their run supply them with it, or with road grit. If this is carried out you will have no difficulty in overcoming the complaint. It is not a natural disorder, neither is it one to which Pheasants, Partridges, or Grouse are subject. Many of these complaints follow the use of substitutes for their natural food.

**REMOVING A SUPER (S. M. C.).**—If your super contains good clean comb we should advise you to let it be, otherwise clean it out and sweeten it by exposure to the air. You can then either replace it or give it to some other hive. It depends on a variety of circumstances whether supers put upon hives at this season of the year retard the swarming of the bees. If the super is large and they take to it kindly now, you may get no swarm at all, or, perhaps, a very large one about the middle of June. A small super will scarcely delay swarming at all, a week or so at most; but it is quite impossible to predict exactly what bees will or will not do. The weather, of course, has a great deal to do with the matter, and the condition of the stock, whether it has a prolific queen or otherwise. In good honey years swarms are often very scarce, and super after super will be filled; in bad years, like the last two or three, swarming has been in many places excessive. If you want an early swarm do not give a large super, but by all means let them have a small one, especially as you say your hive is very full of bees. Proportion the super to the size of your stock and its population. We are all hoping for hot weather, and believe it is not far off. It came three weeks ago as we predicted, and not a little honey has been gathered by all well-to-do stocks.

**STOCK AFTER SWARMING (E. M. M.).**—Three weeks after you have obtained your first swarm you may drive all the bees in the old hive into a modern structure without risk or having to look for the queen. Let the bees turned out be placed on the spot where the old one now stands. In such operations it is not necessary to look for the queen.

**TAKING A SECOND ARTIFICIAL SWARM (H. A. L.).**—Your having succeeded in taking a swarm artificially is encouraging, but bear in mind that there is some danger of going wrong in attempting to take a second swarm from the same hive, for after the queens (now being reared in your old hive) shall have been hatched, no second swarm can be taken with safety. It is quite possible to take a second swarm artificially from a hive at the time the queens are piping or have come to maturity; and it is thus done—two young queens, still in their cells, are cut out of the hive, rolled separately in the corners of a handkerchief, or put separately under glasses, and kept there while a swarm is driven into an empty hive. As soon as this is done, one of the queens is given to the old hive, and the other to the swarm. If more queens than one be in either old one or swarm, they will be killed and cast out. If a second swarm be removed from an old hive when there is only one queen in it, either the swarm or old one will be without a queen or eggs wherewith to provide one. If the queen go with the swarm the old one would be comparatively useless, and if the queen remain in the old one the swarm would return.

**BEES SWARMING (E. H. O.).**—Bees do swarm occasionally, though very seldom, before their hives are quite filled with combs. The appearance of drones in your hive is not an indication that it is ripe for swarming. It may contain drone-combs near its centre, and these may have had eggs set in them as soon as covered with the bees. Owing to the wind being in the north and east all this month bees have got very little honey, and hence they have not been able to build much comb. Examine your hive with smoke, and, if it is ready for swarming, you will find on lifting it a great crowd of bees on the board. Before it swarms naturally, eggs will be set and may be seen in royal cells.

**CANARY'S EGGS SOFT-SHELLED (M. H.).**—Supply some well-crushed old lime rubbish. Put a piece between the wires, crush the remainder and strew on the cage bottom. Discontinue the hempseed. The rest of the bill of fare will do very well. You will not be troubled with any more soft-shelled eggs.—W. A. B.

**CANARIES MOULTING OUT OF SEASON (M. N. G.).**—It is not usual for Canaries to moult in the spring, but it will now and then happen. I do not think the food has anything to do with it, as the two cocks appear to be in the same state. You can do nothing but let it go on, and you may possibly get a late nest. You are in good time for "muling," if that be the last word in your note. The middle of May is quite soon enough to put up a Goldfinch and Canary. If the word be "meeting" my remark is unnecessary.—W. A. B.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
	Baromet. at 32° and Sea Level.	Hygromet- er.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		In sun.	On grass	
		Dry.	Wet.			Max.	Min.	Max.	Min.			
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
We. 13	30.816	51.0	47.0	N.	49.9	62.0	48.9	90.2	39.8	—	—	
Th. 14	30.845	52.9	48.8	N. W.	51.2	68.4	45.3	91.8	43.3	0.177	—	
Fri. 15	29.998	48.9	49.2	N.	61.9	61.6	47.7	105.7	46.2	—	—	
Sat. 16	30.975	49.3	48.7	N. W.	60.9	61.9	55.2	113.4	81.0	—	—	
Sun. 17	30.845	62.0	46.2	N. W.	50.8	63.8	36.5	112.8	30.5	—	—	
Mo. 18	30.284	51.0	45.6	N.	52.2	65.2	34.8	114.0	29.2	—	—	
Tu. 19	30.260	53.3	49.2	N. W.	53.4	61.7	41.2	114.0	31.3	—	—	
Means	30.277	51.3	47.1		51.4	62.0	40.9	105.8	86.4	0.177		

### REMARKS.

- 9th.—A very fine day, especially the after part of it.  
 10th.—Rather cold, but a pleasant day.  
 11th.—Fine morning, but a rather sharp though short hail shower at 3 P.M., and a similar kind of shower but of large rain drops about 5 P.M.; in both cases looking very stormlike in the distance.  
 12th.—A very pleasant day, but rain at night.  
 A week of very pleasant weather, though the temperature is a trifle below that of the preceding one.  
 13th.—Dull morning, a dull day; dark early; drops of rain in evening.  
 14th.—Cloudy morning, very close day; stormlike in the evening.  
 15th.—Heavy rain in morning; afternoon and evening fine; night cold.  
 16th.—Fine all day; very cold.  
 17th.—A beautifully fine and sunny day; clear evening.  
 18th.—Fine day, cloudy at times; warmer in evening.  
 19th.—Dull; very slight showers at intervals.

Temperature slightly warmer than last week, but not nearly so high as a few weeks back. Frost on grass on three consecutive nights, due principally to clearness of the sky and dryness of the air.—G. J. SYMONS.

### COVENT GARDEN MARKET.—May 20.

A fair amount of business is current, and prices generally for prime goods are firm. Imports continue heavy, and comprise a large variety both of fruit and vegetables. Among them are Cherries and Apricots from Toulouse, and a large consignment of Pine Apples from Antigua, some of which are in much better condition than those usually imported from the West Indies at a later period of the year. Old Potatoes have slightly advanced, but new ones have fallen from 25s. to 16s. and 20s. per hundredweight in the trade.

### FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	4	0	0	Mulberries.....	£	1b.	0 0 0 0
Apricots.....	doz.	4	0 0	Nectarines.....	doz.	15	0 8 0
Cherries.....	£	100	4 0	Oranges.....	£	100	4 0 16 0
Chestnuts.....	bushel	0	0 0	Peaches.....	doz.	15	0 9 6 0
Currants.....	4 sieve	0	0 0	Pears, kitchen.....	doz.	2	0 6 0
Black.....	doz.	0	0 0	dessert.....	doz.	0	0 0 0
Figs.....	doz.	8	0 15 0	Pine Apples.....	lb.	6	0 12 0
Filberts.....	lb.	1	0 1 6	Plums.....	4 sieve	0	0 0 0
Cobs.....	lb.	1	0 1 6	Quinces.....	doz.	0	0 0 0
Gooseberries.....	quart	0	6 0 9	Raspberries.....	lb.	0	0 0 0
Grapes, hothouse.....	lb.	4	0 12 0	Strawberries.....	£	oz.	0 6 1 0
Lemons.....	£	8	0 12 0	Walnuts.....	bushel	10	0 16 0
Melons.....	each	4	0 8 0	ditto.....	£	100	2 0 2 0

### VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	doz.	8	0 0 0	Mushrooms.....	pottle	1	0 0 0 0
Asparagus.....	£	100	3 0 6 0	Mustard & Cress.....	punnet	0	2 0 6
French.....	3	0	10 0	Onions.....	bushel	4	0 7 0
Beans, Kidney.....	£	100	2 0 0 0	pickling.....	quart	0	8 0 0
Beet, Red.....	doz.	1	0 8 0	Parsley per doz. bunches	4	0	6 0
Broccoli.....	bunch	0	9 1 6	Peas.....	doz.	0	9 1 6
Cabbage.....	doz.	1	0 1 6	Potatoes.....	bushel	8	6 0 0
Capicums.....	£	100	0 0 0	Kidney.....	do.	0	0 0 0
Carrots.....	bunch	0	6 0 0	Round.....	do.	0	0 0 0
Cauliflower.....	doz.	4	0 10 0	Radishes.....	doz. bunches	1	0 1 6
Celery.....	bunch	1	6 2 0	Rhubarb.....	bushel	0	9 1 0
Coleworts.....	doz. bunches	2	6 4 0	Salsify.....	bunch	1	6 0 0
Cucumbers.....	each	0	9 1 6	Savoy.....	doz.	0	0 0 0
pickling.....	doz.	0	0 0 0	Scorzonera.....	bunch	1	0 0 0
Endive.....	doz.	2	0 0 0	Sea-kale.....	basket	0	0 0 0
Fennel.....	bunch	0	8 0 0	Shallots.....	lb.	0	3 0 0
Garlic.....	lb.	0	0 0 0	Spinach.....	bushel	2	0 8 0
Herbs.....	doz.	0	0 0 0	Tomatoes.....	doz.	3	0 6 0
Horseradish.....	bunch	3	0 4 0	Tornips.....	bunch	0	8 4 0
Leeks.....	bunch	0	8 0 0	Vegetable Marrows.....	0	0	0 0 9
Lettuce.....	doz.	1	0 4 0				

## WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 28—JUNE 3, 1874.	Average Temperature near London.			Rain in 43 years.		San Rises	San Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
28	TH	No real night.  TRINITY SUNDAY. Meeting of Entomological Society, 7 P.M. Meeting of Zoological Society, 8.30 P.M. Meeting of Linnean Society, 8 P.M.	68.1	44.4	56.2	15	54	af 8	17	5	32	2	13	3 2 148
29	F		67.5	44.1	55.8	15	53	3	1	8	32	6	14	2 55 149
30	S		68.4	44.7	56.6	17	52	8	2	8	48	7	15	2 47 150
31	SUN		69.4	44.8	57.1	16	51	3	3	8	3	9	16	2 39 151
1	M		68.4	45.9	57.2	15	50	3	5	8	10	10	17	2 30 152
2	TU		68.9	45.1	57.0	19	50	3	6	8	5	11	18	2 21 153
3	W		69.4	44.2	56.8	21	49	3	7	8	46	11	19	2 12 154

From observations taken near London during forty-three years, the average day temperature of the week is 68.6°; and its night temperature 44.7°. The greatest heat was 85°, on the 2nd, 1831; and the lowest cold 25°, on the 29th, 1865. The greatest fall of rain was 1.02 inch.

## WALLFLOWERS.



HIS, one of the oldest, hardest, easiest-grown, and sweetest flowers of spring, is worth cultivating if it is not worth writing about; yet it is worthy a line in this Journal if it is worthy a place in the garden; for what is the garden press but gardens condensed, the spirit of which the garden itself is the practical expression? I will not apologise, therefore, for taking the Wallflower for a theme, nor will I admit that I am stooping to notice a plant too insignificant for a due meed of attention. "Stooping," have I written? It is an anomaly. There is no such term that can be justly applied derogatory to any plant, or root, or flower that is sent to enrich this wonderful earth, to give food to body and mind, to awaken our sympathies, to gratify, to enjoy. Does some one mutter, "Sentiment and poetry?" because if he do, let me tell him he is not practical, and has not thought, observed, or worked to any purpose that does him honour or credit. Have not most people observed that as youth gives way to mature age the judgment becomes more just, and decision goes on innate merits, not swayed by mere fancy, fashion, or enthusiasm? Let, then, the young imitate the old, and put aside all fashions, notions, and prejudices, and look at the Wallflower on its merits alone. Surely that is practical enough. However, if it could serve no practical purpose it would have no place here. But it can and does, and that is the answer to any who doubt its usefulness, and the reason that, simple and common as it is, it is elevated to a niche in garden literature.

The Wallflower is a very old friend indeed, having probably had a place in English gardens for upwards of three hundred years. It is surprising how many people have a—yes, "strongness" is the correct term now—"weakness," having got the cold shoulder editorially—for old things. Let none regret if this strongness grows yet stronger. It is a healthy sign. One can generally repose confidence and put trust in him who can revere an old church, cherish an old castle, esteem an old tree, value an old flower, and honour an old man. This inherent affection for old things is a national characteristic, and befittingly so in an old historical country like our own. Do we see one who would laugh to scorn the hoary relics of the past, and speak of the mind matured as "fossilised?" Keep him at arm's length. He is not safe as a guide, adviser, or friend.

But to the Wallflowers. They have a long history behind them—yes, and a long future before them, for they will not be driven away. They cling to old gardens, old buildings, and cottage walls from generation to generation. It is no wonder that their pertinacity has found them a friend here and there, sometimes—perhaps oftentimes—humble, sometimes noble, yet friends all, and, what is more, friends increasing. See Wallflowers where we may in early spring, they compel a pause to inhale their delicious fragrance and admire their native colour

and beauty. See their power in adding a charm to such places as Cliveden and Belvoir, to hundreds of gardens of less note, and thousands of cottagers' plots made sweet and cheery by their presence. This cosmopolitan character of the flower is a great advantage. If the perfection of legislation is effecting the greatest good to the greatest number, surely a flower having corresponding qualities is worthy of care, especially where this care is of the simplest and easiest, and within the means of everyone having a garden readily to bestow. For two months—April and May—it takes the first rank in any flower garden, and fills a place which nothing else can do to the same purpose and with the same effect. Yet if we find it done justice to, and turned to any real decorative purpose in one garden out of ten, that is the outside. True it is that Wallflowers are often enough seen in perhaps most places, but the spindly straggling plants too commonly met with are only a mere apology for the effects well cultivated plants of a good strain are capable of achieving.

Furthermore, attention has, perhaps, latterly been given to the double and semi-double German varieties offered in seed with glowing pedigrees attached, and which in innumerable instances have not come up to the high—too high—standard anticipated, and the whole race has fallen into disfavour from the shortcoming of a particular type whose virtues had been over-estimated. A fair proportion of doubles may come good by seed, but as a whole this class only very occasionally gives any real solid satisfaction to the cultivator when planted to create an imposing effect in lines and masses, their habits being too diversified. Dotting them here and there in isolated clumps, without any regard to height, shape, or colour, is the best way of doing justice to the type, and used in this way they often please; but as doubles they fall far short of the old-fashioned perennial class of Wallflowers which the grandparents of fledgling gardeners of the present used to delight to honour. If doubles are wanted, grow these. There are two or three shades of red, as blood red, light red, and purple red, also striped and full-blown yellow. The first and the last are the best, the yellow being especially effective for in-door flowering early in spring. These are far before the German hybrids, and can only be perpetuated by slips or cuttings. These, if put in in May under a hand-light in light soil, or ever in the open air on a shaded border, will root freely; but a far quicker and better plan is to put them in heat after the manner of Verbenas, using the young shoots as cuttings, in contradistinction to the half-ripened stubby side shoots as slips.

For real usefulness, however, give me a first-rate strain of singles of uniform height and habit, broad-petalled, and of decisive colours. These are the plants for spring gardening. They flower early, last well, and are off in convenient time for summer bedding. One of the most useful introductions of recent years is the Tom Thumb single yellow Wallflower, so bright, compact, free, and especially so constant from seed. This has already yielded sub-varieties, the Belvoir Castle being reputed as the best,

but as yet I have not had the true variety from seed. It should be grown everywhere by everybody. Amongst single dark kinds I have never found anything so fixed and constant in character as the Tom Thumb Yellow, although I have tried seed from various sources. The best down to the present time are from seed specially secured from Dresden by favour of Mr. W. Thompson. A really good strain of dark single Wallflower is still a desideratum. We can get them dark enough, but the individual flowers are poor, and the habit of plant not sufficiently sturdy and dwarf; moreover, there are dark and dark, one bright and the other dingy, one dazzling and the other dead. When planted, a dwarf Wallflower should not be more than 4 inches high, a foot across the top, and as flat as a pancake. Such a plant will throw up from twelve to twenty spikes all of uniform height, and if the colour is dark yet bright, the petals broad and stiff, and expand freely—the flimsy ones curl—then, in juxtaposition with bright yellow, there is an effect for richness that nothing else at the season can approach. And then the perfume! it is, too, equally unapproachable. Doubles, be they never so good, are no match for singles in masses.

And then the working-up a stock is simplicity itself. Spend sixpence or a shilling in seed, sow now at once. Mine are up and doing. Sow thinly in any open place. After awhile transplant to a very airy place a foot or more distant on any piece of ground that happens to be vacant. It need neither be freshly dug nor manured, and after the plants are once established they need never be watered. Early sowing (April) and growing on in rather poor firm ground produces plants of a stubby growth and hardy nature which hardly ever get hurt by frost. It is very different when sown late and pushed on to make up for lost time by high culture in rich soils. It is, however, not too late to sow in May, only April is better.

Now, just look at the little outlay in money, time, and skill; it is homœopathic altogether. And what else will give, at the same outlay, an equal return of sweetness and colour, and contribute such a decided element in making a garden so cheerful and enjoyable? I think we must "pause for a reply." These plants, too, will force and make their presences felt in greenhouse or conservatory in March. I have seen amid a floral retinue of Camellias, Azaleas, Hyacinths, and Roses rich masses of single Wallflower claim more attention than either. Whether it is that their odour is so grateful, or that the simple novelty of the bold intrusion is attractive, I cannot tell. A sweep at a fashionable wedding would no doubt be the "observed of all observers," but would run some risk of being kicked out; however, it was not on this principle that these sweet and simple flowers attracted notice, for the order to the grower was—"They have been so much enjoyed; mind and have more."—J. WRIGHT.

### METHOD.

METHOD seems to come naturally to some people; all their movements seem to be regulated by some inscrutable control which prevents any waste of power, but which always supplies sufficient to attain the object wished for in a leisurely graceful manner. A keen eye can detect the man of method in an instant, even if he is following the very humblest occupation. Notice a gang of ten or a dozen labourers excavating, and you will see one amongst them who seems to move much more slowly than the rest, and an unpractised eye might think he was not doing his share of the work; but watch him a minute, an hour, or a day, and you will see the same machine-like movement going on perpetually to the end—no straining nor jerking, and consequent waste of power; every movement of the spade seems to have just the effect it was intended to have; the spade itself almost seems to know what it is about, and to appreciate a good master. It wears brighter and sharper than other spades, and to a certain extent partakes of the good qualities of the man who uses it. Notice the same man, too, with a scythe; he can be distinguished by the same easy, graceful, telling movements. It is indeed a pleasure to watch a good mower; he seems to be merely amusing himself, while the others are all excitement and hurry, and at the end of the day's toil he is fresh and cheerful, while others, who possess greater bodily strength but do not know how to use it economically, are quite exhausted. Again, notice three or four young men potting, watering, thinning Grapes, or putting in cuttings. You will see that only one of them does the work, or ever will do it, in a proper manner; and also that the one who does one kind of work the right way will in the end learn to do all

of them right. In fact, he is the man of method; he works with his head, and saves his hands and his back. He is never in a hurry, and yet he is always in time; others are always in a hurry, and yet never do anything. The late Dr. Nelaton said, "There is always time for everything provided you are not in a hurry," and it would seem that he not only promulgated this doctrine in his leisure moments, but that he acted on the same principle at the most critical times. For instance, when, in performing a surgical operation in company with a young student, an artery was cut, and the young man became excited, the doctor rebuked him by calmly saying, "You are going too fast, my young man, we have no time to lose."

Nothing is ever well done that is done in a hurry. The man who would use his strength, time, and money economically must do all his work by method, coolly and calmly; no haphazard or guesswork, for that will only end in muddle and disorder; he should see his work completed in perspective before it is actually begun. The man of method actually gets through his original experiments with a greater precision and regularity than the man of no method does the commonest routine; while the experiments of the latter, even if they are chronicled, are of no practical value, and can only be misleading.

The man who shows that he uses his own hands with method will exhibit that quality in a greater degree when directing others, and men properly directed will get through their work with a better grace than those who are not; for although there are a few men who care about nothing but the time of day, these are much more rare than is often supposed, and the blame is sometimes laid to the men which ought to be borne by other shoulders. No good workman ever likes to be forced to do his work in the wrong way, and he always works the better when he believes that those who are directing him know as much about the work as he does himself. Young men who would aspire to be foremen should bear this in mind, and give early attention to all the details of what is too often supposed to be mere labourers' work.

There is a right and a wrong way to do the commonest operations, and it would seem that the wrong way comes the most natural to an unpractised hand. Also one should learn to be particular about doing things at the proper time, and learn by heart the time of year that is most suitable for the principal kinds of work. The memorandum book is a great help to this; the mere act of noting a thing down often impresses it indelibly on one's memory. All failures should be especially chronicled, and, when possible, the cause of such failures. Very often the man of method gains more by failures than by successes; he never forgets a failure, and seldom falls into the same error twice. The methodless man is always failing, always in a muddle, always forgetting something, the apparition of which every now and then appears in an almost tangible form, and throws him into worse confusion, and makes him forget something else.

When a man has grown old and has not learned to work by method, I do not think there is any help for him, for unlearning a thing is so much harder than learning it. But young men, and young men's teachers, believe me, method is not so much a natural gift as it seems to be; it may be acquired by any young man of ordinary intelligence if he begins by being very particular about little things—all the minor details of his work—asking himself why it is all done, and making notes from time to time of his own ideas about it, and especially correcting himself when he finds that his own notions have proved fallacious; he thus secures practical knowledge for future use. And even when one gets to be foreman or head gardener the note-book should never be neglected—in fact, one who has an extensive charge wants two note-books; one a very temporary affair to last a week or a month, in which to mark down as he walks round any work that should be done, crossing it out when finished. This will save many a thing from being forgotten, many a journey, and many a sleepless night. The labour, too, can be used more economically; for instance, on a change of weather the notes can be looked over and the men sent in a few seconds to the most suitable work, instead of keeping them waiting doing little or nothing, and afterwards finding out that a good opportunity has been lost.

Some men pride themselves on having a good memory—they need no note-book. Possibly their memory may be sufficient for the ordinary routine, but a gardener is nothing if he is not progressive; his head ought not to be crowded with ordinary routine, but should be clear, that he may devise improvements and give new delights, surprises, and encouragements to those

who, from no fault of their own, have not half the happiness in the garden which he himself enjoys.—WM. TAYLOR.

### ROYAL HORTICULTURAL SOCIETY.

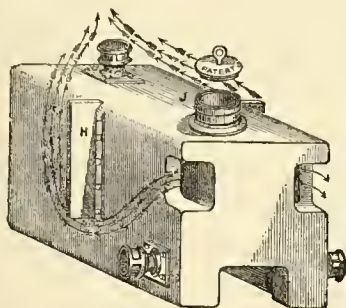
THE Council of the Royal Horticultural Society telegraphed on the 19th inst. to the President of the Tuscan Royal Horticultural Society, to propose that an International Show be held in London in 1876. In the event of the proposition proving acceptable, the Council will at once take steps to organise a joint Committee representing the Society, the Royal Botanic Society, and the other leading horticultural bodies, should they be willing to lend their assistance.

The Council propose that the Society should hold a dinner this year in the latter part of June. The prices of the tickets and other details will be notified as soon as possible; but we may mention in the meantime that, if feasible, the dinner will take place at Chiswick. The success of the undertaking will of course depend upon the numbers who attend, and the Secretary wishes to hear from Fellows on the subject.

We are informed that what has been published about a country meeting at Wigan is quite premature.

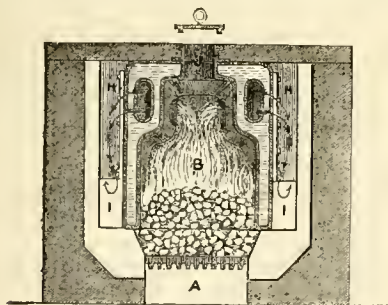
### PATENT CLIMAX BOILER.

We publish the following for the information of some Irish correspondents. For further particulars they must write to



Front Elevation.

the Thames Bank Iron Company, whose advertisement appears in our columns. It seems simple in construction, is made of



Cross Section through Feeder.

wrought iron, will bear great pressure, and has no joints or sockets. It is made in various sizes, from 24 inches to 60 inches in length, the smallest being capable of heating 750 feet of 4-inch pipe.

### FRUIT PROSPECTS.

I AM anxious to know if there is the same scarcity of fruit, or rather blossom, on Apple trees generally this year as is the case here. I have just been round the garden and two orchards. In all there are about two hundred Apple trees, and for the last four years I have had hundreds of bushels. I have now in the house a few bushels left of a most excellent cooking Apple; but this year, without the slightest exaggeration, there will not be one bushel from all the two hundred trees together. Is this failure general? There is an enormous crop of Pears and also Apricots. Only a few Plums, and the Peaches and Nectarines are utterly spoilt from blight, which I find has affected the

whole neighbourhood. Every one's Potatoes have been seriously damaged by the severe frosts of last week.—F. P. G., Shrewsbury.

### RHODODENDRON NUTTALLII.

RHODODENDRON NUTTALLII is now in bloom in the gardens of the Misses Cattle, Claydene, Edenbridge. The truss of bloom on the main stem consists of nine flowers, measuring 16 inches across, and the individual flowers over 6 inches in diameter with the same depth of tube, and two of the side branches have one truss of five flowers each, being nineteen flowers altogether. The flowers are pure white within, saving a tinge of gold colour in the throat, with a tinge of delicate light rose round the margin. This may encourage to perseverance some of your readers after the many disappointments from its not often flowering. The plant is 11 feet high, consisting of one main stem and three branches starting about 2½ feet from the base. Would it be advisable to cut it down as soon as it has done flowering to within about 3 feet of the pot and that would leave 6 inches of stem to all the branches? The plant is quite healthy, only too late for us.—THOMAS NEIL, Claydene, Edenbridge.

### FOUNTAIN'S VINERY AT BLENHEIM.

I MUST once more crave your indulgence to say a few more words on the above subject, though Mr. Temple's remarks were really answered in my former article. All the questions, moreover, brought forward by him and many more are fully considered and answered in my pamphlet on the subject, and of this fact he is as fully aware as I am. There are, however, several points left by him to be inferred which might lead to error. He says he is aware the plan was submitted to Mr. Thomson when he was gardener at Dalkeith; "However, it was not put in practice there." It was never submitted to Mr. Thomson with that view, nor was he ever asked to promote the building of a house in those gardens. Mr. Temple says there was but one Madresfield Court Vine on the rafters of the house at Chiswick when he saw it. The house is only 25 feet in length, and probably Mr. Barron considered one Vine with three stems 8 feet apart as good as three separate Vines; but I have not been there lately to be able to state this as a fact. He says there was no fruit on the trees, only healthy foliage. Perhaps the fruit had been gathered. At all events (as I stated in a former article), Mr. Barron wrote to say that Peaches were very scarce last year throughout Chiswick gardens, but that those grown on my system had, without doubt, the best flavour, so there must have been some fruit at some time. Mr. Temple gives no account of what stone fruit he saw in the various other houses at Chiswick.

As to the different process required for growing fruit for market and for a gentleman's table, as quoted from my pamphlet, where the reasons are fully stated, the remark is not mine, but that of a first-rate gardener, and I quite agree with him.

Mr. Temple goes on to say, "If Mr. Fountaine can bring his fruits on under glass to give earlier supplies, the Vines will be there still. Then, what about shade which alarms him so much in the earlier part of his paper? This suggestion floors Mr. Fountaine's argument of keeping the fruits entirely out of doors to secure flavour." Perhaps Mr. Temple will tell us why the Vines are planted only 8 feet apart on the close-spur-system, except to give ample light and heat to the trees when in the house, and to prevent the house being useless to them, as it would be by Mr. Temple's proposal of "giving the system a trial on its widest merits," under a roof covered wholly with Vines. As to this "flooring" my own argument of keeping the trees entirely out of doors to secure flavour, it would have saved trouble if he had talked of flooring an argument I never used. Where, or when, have I ever proposed to keep the trees entirely out of doors? I have very strongly advocated the contrary view, and given it as a reason why carrying out the pots permanently by hand does not answer, as if the weather changes they are better put back again. The late Peaches if kept out for extra retarding in cold autumns at the ripening period would lose flavour, and so would the early-forced fruit if kept in the house in fine weather; but this sacrifice must be complied with as regards very early and very late fruit in both these extreme cases. Mr. Temple adds, "When I say Mr. Fountaine's system can be adopted with success, I am again pointing to the *£ s. d.* view; my return of Grapes would

have to be much larger than those at Chiswick, even were all these Vines at 8 feet apart loaded with fruit." And so ought the return to be larger as so stated, for the Vines being planted at that distance from each other enables first-rate Grapes to be grown on the whole back wall of the house, which would afford as many square feet of Vines in the aggregate as would the whole roof if covered by them; but Vines on the back wall would be utterly useless if the rafters were quite covered also. As the Vines on the back wall occupy with their roots the soil in the house, no gardener would dream of planting therein stone-fruit trees also, but the trees on the trucks when in the house in no way interfere with the roots of these Vines. The Vines on the rafters should have their roots in a bed outside the house. I regret to say this was not done at Chiswick as proposed by me when the Vines were planted. There were, however, some difficulties as regarded the locality of the house for the outside border.

Mr. Temple says, the only objection he has to orchard houses on the pot system is "the vast amount of labour they give compared with trees planted out." If Mr. Temple has never happened to notice how long it takes to water the trees on the six trucks at Blenheim I can tell him, and at what cost it can be done, supposing, of course, that the water-supply is not distant. What is done here can certainly be done there. A strong boy can water every pot on the six trucks thoroughly (going over them twice), within the hour, and not hurry himself beyond his usual pace of work. Thus, if the trees were watered every night for eight months throughout the year the cost would be at the rate of about 1s. per week, 32s. for the year.

Mr. Temple is quite right to study economy in all his departments, as nothing can be done without it in large gardens; but would the trees require this "vast amount of labour?" would they require to be watered every day for eight months? Certainly not, nor anything like it, when they can have both rain and dew in genial weather. I have deducted nothing as a balance for the watering of the trees planted out in the house. I presume they would always require a certain amount of watering under the heat of a glass roof.

So much for the disadvantage of the pot system. One of its principal advantages over trees planted out, and which applies to any kind of orchard house, is that if any trees fail to bear—which they will do if overcropped—their places may be filled up at any time from a reserve of extra trees always kept in some corner of the garden, which, from having rested the previous year, are almost sure to bear, but should not be allowed to do so longer than they are wanted for filling-up, which will rest them again for the next year. Thus there will always be a tree ready in the spring to fill up a gap if wanted, and no failure could appear in the house except from ignorance or neglect.

As to moveable lights overhead, they are now generally discarded, as adding immensely to the expense of the house, and, from the weight and thickness of the rafters required to carry them, causing more shade in the aggregate than Vines planted 8 feet apart. They are, moreover, not nearly so good for ventilation in this case as the free open air under the protection of a south wall, the stone fruit requiring more ventilation than the Grapes. The house at Blenheim has, however, more than usual ventilation as far as front and back top lights are concerned whenever required. Perhaps Mr. Temple has never noticed that the trees on the trucks when out 4 feet from the wall, get from an hour and a half to two hours' more sun both evening and morning all through the summer than do the trees on the wall; but such is the case, and is the reason, no doubt, why the fruit has better colour and better flavour; though, strange to say, this never struck me till last year, when I made the experiment as to time on the 15th of July. No sooner has the sun passed the line of wall than the wall is enveloped completely in its own shadow, and this quite suddenly; whereas after an hour and a half a further clear light upon the trucks, the shadow of a 12-foot wall begins to creep slowly up the stems of the trees till they are very gradually enveloped in shade. The reverse process takes place in the morning.

In conclusion. Of course I see the drift of Mr. Temple's remarks, but I am, nevertheless, much obliged to him for having made them, as it has enabled me to correct misapprehensions and to establish facts which are incontrovertible, of which those who read may judge. I assure Mr. Temple he has said but one thing which annoys me, and for that he is in no way blameable. Although I had nothing to do with the erecting of

the house at Blenheim in a trading point of view, I am much vexed to hear that it was not strongly put together. There was no excuse for this whatever, in spite of the other houses in the gardens having, as I understood, cost four times as much in proportion. I am, however, glad to hear that an iron has been applied to the twist, and that it is now in as good order as the other houses. The man who then built the houses has retired from business, and the whole thing is put into the hands of a London firm.

As Mr. Temple lays so much stress upon the *£ s. d.*, I ought to have mentioned the smaller front trucks for winter vegetables, Strawberries, or flowers according to the gardener's fancy; but the same remarks as to management apply in both cases. Whatever may be said against the houses in a commercial point of view, though they were not proposed for that purpose, the opinion expressed by the late Mr. Veitch at Chiswick will carry weight with many—viz., that "an immensity of work might be done with such a house."—JOHN FOUNTAINE, *Southacre Rectory, Brandon.*

[Here this passage of pens may cease, for each combatant has fully maintained his own view of the question.—Eds.]

## ROYAL HORTICULTURAL SOCIETY.

MAY 27TH.

**FRUIT COMMITTEE.**—The only subject submitted to the Committee was Watson's Antagonist Cucumber, a white-spined variety, exhibited by Mr. Watson, nurseryman, St. Albans.

**FLORAL COMMITTEE.**—R. B. Postans, Esq., in the chair. There was less shown at this than at any meeting during the present year, no doubt owing to the Manchester Show, the holidays, and exhibitors holding back for the Society's great exhibition on the 4th and 5th of June. Messrs. Haage & Schmidt, of Erfurt, exhibited a number of double Cinerarias in which the florets of the disk have become, at least the major portion of them, coloured like those of the ray; for this novel strain a first-class certificate was awarded. From the same firm came also a number of varieties of *Myosotis alpestris*. J. S. Law, Esq., South Lodge, Enfield Chase, had a cultural commendation for *Lilium Humboldtii*, together with *L. concolor*. Master R. P. Barr, New Road, Lower Tooting, sent, in competition for Messrs. Barr and Sugden's prizes, a group of cut flowers of *Lilium*, chiefly varieties of *L. monadelphum*, together with *pyrenaicum*, *tenuifolium*, and *Pomponium*. Messrs. Veitch exhibited *Lilium monadelphum speciosum*, together with *Boronia elatior*, which was noticed at a previous meeting. They also exhibited for J. Smith Dorrien, Esq., cut spikes of *Puya chilensis*, 8½ feet high, which blooms in the open air at Trecco Abbey, in the Scilly Isles. The flowers form a large head at the summit of a column-like flower stem, and are greenish yellow, with conspicuous orange anthers. A full account of the plant is given by Sir William Hooker in the "Botanical Magazine," t. 4715.

Mr. Watson, nurseryman, St. Albans, exhibited a portable stove boiler, called "The Masterpiece," which is especially intended to be used in the case of a boiler becoming unserviceable during frost, and which may also be used for heating small houses.

## FLORENCE INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

No. 2.

In our last report we briefly referred to the collections of Terrestrial Orchids. Those shown by Professor Carvel were in very creditable condition, well established in the pots, well cultivated, and well bloomed. There were twenty-two species in all, and among them *Serapias cordigera*, *lingua*, and *neglecta*; *Orchis laxiflora*, *longicurvus*, *pecta*, *provincialis*, *rubra*, *tephrosanthos*, and *tridentata*; *Ophrys aranifera*, *bombiflora*, *fusca*, *lutea*, and *oxyrrhynchos*; and *Isias triloba*. From the Turin garden Professor Del Ponte sent, besides those named above, *Cypripedium Calceolus*; *Himantoglossum*; *Nigritella angustifolia*; *Orchis coriophora*, *globosa*, *palustris*, *papilionacea*, *Rivini*, *tridentata*, *viridis*; *Ophrys Bertoloni*, *lutea*; and *Serapias longipetala*. There were thirty species in this collection, but we have only mentioned those that are the most rare with us.

Up to Saturday the 16th the only prizes of which we had any cognisance were Messrs. James Veitch & Sons, first prize for a collection of *Nepenthes*, and first prize for *Cypripediums*.

### BOUQUETS.

We expected to have seen among the bouquets and table floral decorations designs which were at the same time novel, graceful, and artistic, but we were disappointed. The designs

were stiff, heavy, and hideous. As an example, there was a swan—a white swan of course, exhibited by Mr. Pietro Cardella, of Rome, the long neck of which was composed of white Stocks, and the wings and body of white Indian Azalea. It carried a large bouquet of miscellaneous flowers on its back, while it floated, or was supposed to be floating, on a lake of Pansies. The same exhibitor had numerous other designs, some of very large size, but all equally stiff and heavy. One of them would have been very effective had it not been for a superfluous canopy which surmounted it. It consisted of a basket or vase, the base of which was composed of four rays, two of which were red Azaleas alternated with white, and wholly sprinkled over with sprigs of Lily of the Valley; the edging composed of leaves of the latter. The upper portion was mixed flowers of Roses, Azaleas, Deutzias, Heliotropes, Weigelas, Cinerarias, and Pelargoniums, studded all over with sprigs of Lily of the Valley. The canopy had the same flowers in it, and a great bouquet on the top. There was another very pretty basket of white and flesh-coloured Camellias, Tea Roses, pale Heliotropes, *Adiantum cuneatum*, *Pyrethrum frutescens*, Pelargoniums, and Begonias, also studded with sprigs of Lily of the Valley. The edging was also in this case of the latter.

*CYCAS REVOLUTA*.—On page 365, in reference to the *Cycas revoluta* at Nash Court, which has produced thirty-six fronds this spring, with a spread of 8½ feet, Mr. McCrow asks if any one of your readers has seen or heard of a *Cycas* with a like number. We have a specimen of *Cycas revoluta* which produced last year forty-one fronds and has a spread of 9 feet.—PETER STEWART, *Gardener, The Glen Gardens, Innerleithen, Perthshire.*

### NEW BOOK.

*The Amateur's Rose Book.* By SHIRLEY HIBBERD.

We have great pleasure in thoroughly recommending to our readers, especially those who are interested in the culture and raising of Roses, this new edition of Mr. Shirley Hibberd's "Rose Book." It is written by one who seems to have fully mastered the subject, and to be familiar with the different operations in budding, grafting, striking, &c., which he describes; and the directions he gives are of that practical utility so much needed in any monograph on a single flower.

Any rosarian who takes it up must not expect to have his fancy tickled, or his risible muscles excited, as many will have experienced when perusing another work on Roses by the Rev. S. R. Hole. There is room for both on our shelves: one to divert the leisure hour, the other to instruct. We mention this, as some may think there are so many books and instructions given about Roses, that there can be no necessity for more. Now, the genial author of "The Book on Roses," the Rev. S. R. Hole, has written his *con amore*, and has described many a pleasant scene and many an amusing anecdote, but he is so full of Rose lore himself that he thinks others must be also; so that, while his work is both interesting and amusing to all lovers of flowers, it does not enter into the minor details of the craft, and he writes, moreover, on one especial phase, we might say, of Rose-growing—i.e., for the exhibition-table, and therefore thinks more of the individual beauty of the flower than of the lasting welfare of the plant. This difference between the two authors is very manifest with regard to their difference of appreciation of the standard and of the dwarf, the Dog Rose and the Manetti.

The book contains more than 250 pages of closely-printed matter, and it is very difficult, therefore, in a short review to enter at all fully into its merits. It begins by giving short histories of the families of the wild Roses, and secondly of the garden Roses. It appears to be still very difficult to classify our garden Roses with any degree of certainty. So many of our best Roses, especially in that large class Hybrid Perpetuals, being chance seedlings rather than Hybrids, it is difficult at times even to guess at the parents. The classes most distinct, perhaps, are the Banksians, the Mose Roses, the Noisettes, and the Tea-scented; but even among the Tea-scented and Noisettes we have several that seem very nearly allied. For instance, *Maréchal Niel* is generally classified as a Noisette, but both in the form of its flower and petals, its scent and its foliage, it is nearer to a Tea than a Noisette. *Gloire de Dijon* is usually called a Tea, but in its growth and habit it partakes more of the nature of a strong Bourbon, and it seems more than probable that the male parent of *Maréchal Niel* was a

Tea, and of *Gloire de Dijon* a Bourbon. We have, too, a class called Hybrid Chinas, which in many cases seem to be far removed from any China blood, the true old pink Monthly China and such Roses as Mrs. Bosanquet, *Cramoisi Supérieure*, &c., being remarkable for their freedom in blooming, whereas so-called Hybrid Chinas as *Blairi No. 2*, *Chénédolé*, *Fulgens*, &c., never seem to have the least inclination to second blooming. The same may be said, too, of the Hybrid Bourbons *Charles Lawson*, *Coupe d'Hébé*, *Juno*, &c.; neither in form of flower, nor in wood and foliage, do they seem to have the least resemblance to true Bourbons, such as *Sir Joseph Paxton*, *Apolline*, *Baron Gonella*, or *Souvenir de Malmaison*.

Among the Hybrid Perpetuals there seem to us to be many much nearer to the Chinas and Bourbons. For instance, that beautiful and most fragrant *Rose La France* has clearly China blood, and, from the character of the wood, *Charles Lefebvre*, *Madame Caillat*, and others are closely allied to Bourbons. Mr. Shirley Hibberd points out the complex character of the Hybrid Perpetuals when he says, page 26, "That China, Bourbon, and Damask have mainly contributed to the formation of the race, may be clearly deduced from their more prominent characteristics, but we do find in them traces of Tea and Noisette; and in proportion as the blood of the last two tribes mingles with the stream, the Roses manifesting it tend to detach themselves from the Perpetual group, which has a certain unity and family likeness despite its mongrel character."

Much has yet to be done, we think, in trying by careful hybridisation to produce some more definitely-marked classes of Roses. It would be interesting even now to select out of this large class of Hybrid Perpetuals those which are of particular types; and we are sure, as we have before remarked, there are many more deserving the names of Hybrid Bourbon and Hybrid China than those which appear under this nomenclature under the heading of Summer Roses.

Mr. Hibberd gives an interesting classification of Roses under their different shapes, as the globular Rose, the cup-shaped Rose, the tazza-shaped Rose, the imbricated or expanded Rose, the reflexed, and the quartered. These shapes have already, we believe, been accepted by French Rose-growers as types. Of these the tazza shape is really only a more fully-expanded form of the cup-shaped Rose, and the expanded and reflexed are really of the same type; but justice is not done to these in the accompanying engravings, as they are out of drawing. The expanded Rose never has a high centre as in the drawing, and in the reflexed form the calyx would not have been seen, as it is one of the characteristics of reflexing Roses that the petals curl back so as to cover or hide the calyx when looking sideways at the Rose, as in the illustration given in the book. It seems to us that the six forms might be put into four—that is, cup-shaped, globular, flat, and quartered. One thing may, we believe, be especially noted—that in all the highest type of Roses the outer guard petals should be the largest; these protect the bud, but they should not overlap or grow over the point of the Rose, as is the case sometimes with such Roses as *M. Noman* and a few others of that type. Those Roses which begin to open at their centre before the outer petals are fully developed, such as *Clémence Raoux*, *Comtesse de Jaucourt*, *Thyra Hammerick*, and a few others, are never to be depended upon, though occasionally they may give a good flower. We have so many good Roses now of good shape in nearly every form and colour, that every had-shaped Rose and every new Rose of a bad type should be discarded. We do not want any more flat and ragged Roses as *Abbé Bramerel*, or rough ones like *Edward Morren*, or hard-centred Roses of the *La Reine* type. No new Rose ought to be certificated now unless it is—1st, distinct; 2nd, of perfect form; 3rd, good substance of petal; 4th, each petal shell-shaped and egg-shaped.

We have not time this week to enter more into detail with regard to this work of Mr. Shirley Hibberd's, but will draw our readers' attention to his remarks on standard Roses, in which we can altogether sympathise, and which one of our contributors to the Rose lore of our pages has already pointed out. Page 14 he says, "Nine-tenths of all the mistakes made by amateur gardeners are in connection with standard Roses. They buy, they plant, and wait, and never see the beauty of the Rose. They find their gardens filled with ugly sticks, which occasionally flaunt a ragged Rose that proves to be worse than no Rose at all, and yet those same trees would have made handsome heads and myriads of noble flowers had they been properly treated in the first instance."

Planting standard Roses on grass, or in little beds on the margin of the grass, is usually the first step to failure in Rose-growing, for the English Briar is a hungry plant, and requires more food than it is possible for it to obtain when so situated."

These remarks we thoroughly endorse, and also add that whereas in five gardens out of six the soil is not suitable for the English Dog Rose, which requires either a strong moist loam or a good clay well manured and well worked; so, on the other hand, nearly all strong-growing Roses would thrive in ordinary garden soil if only established on their own roots, which may be done in the course of two years by using the Manetti as the medium, with this manifest advantage, that no frost can entirely destroy your plants so long as the roots are uninjured; and though every shoot above ground may be destroyed, the plant will grow again from below ground, and make a good plant in one season.

### ROYAL GARDENS KEW.

At Kew, in the succulent house, a large plant of *Dasyliion acrotrichum* is throwing-up its flower stem, growing at the rate of 1 foot in twenty-four hours. Although it has flowered before, this, I believe, is the first occasion of its being recorded in a horticultural paper. The flower stem of *D. glaucum* is just visible. I may remark that *Beaucarnea Hookeri* is the correct name of the plant universally known as *Dasyliion Hartwegianum*; it flowered at Kew last summer. The latter name belongs to a plant not in cultivation. Few *Dracæna*s are ornamental in flower. In this house *D. latifolia*, often erroneously known as *D. fragrans*, bears a handsome panicle, the stout white filaments contrasting well with the otherwise green flowers; it is also sweetly scented.

In the Cape house is the rare and extremely curious *Pelargonium Bowkeri*. The three lower petals are a dull pink, almost entirely cut into a fringe of filaments; the two upper pale yellow, but not so deeply or finely divided; also the new yellow-flowered *P. oblongatum*. Here also is *Gladiolus Colvillei alba*. Its chaste pure white flowers show it to be a plant worthy of extensive cultivation. In this instance there are six spikes from bulbs in a 6-inch pot.

In the Orchid collection in bloom, chiefly worthy of attention are *Cattleya labiata*; several plants of *Cattleya Mossiae*, including two or three very fine varieties; the very rare *Anguloa Ruckeri sanguinea*; *Anguloa Clowesii*, which in more than one work is said to have a pure white lip, here does not differ in colour from the rest of the flower; *Cœlogyne ochracea*; *Mesaspidium sanguineum*; *Dendrobium McCarthiae*; *Aërides Fieldingii*; *Odontoglossum Pescatorei*; *O. læve*, and *O. sceptum*; a brilliantly-coloured variety of *Maxillaria tenuifolia*, not often worth cultivation; *Lycaste aromatica*, eighteen flowers from a small basket; *Phalenopsis Lüdemanniana*, with the never-out-of-flower *P. rosea*, and the very curious *Gongora portentosa*.

Passing to the rockwork is the first Lily in flower, *Lilium tenuifolium*; the brilliant scarlet flowers, slender stem, and peculiarly narrow leaves, render it very desirable as a distinct and beautiful species. It is easily grown and quickly flowered from seed. Near at hand are the charming *Anthemis Aizoon*, from Macedonia, quite a gem; the white capitula are the size of a shilling, and rise comparatively high above the dense tuft of narrow silvery foliage—it is found in very few collections;—*Eremurus spectabilis*, a not-common bulb, bearing a raceme of flimsy pale yellow flowers, having orange-coloured anthers much exserted; *Dianthus glacialis*, not 2 inches high, and thickly set with pink flowers; *Iris setosa*, *Ramondia pyrenaica*, and the bright *Lychnis Lagasceæ*. A few bits of *Ionopodium acule* dotted about have a pretty appearance. *Fabiana imbricata*, which forms a fine shrub in the west of England, is flowering profusely on a wall of the new range. It should have a similar position in every garden, and be protected in winter.

In flower in the herbaceous ground is the *Iris tingitana*, brought from Morocco by Dr. Hooker. Its rich gold and purple form a beautiful contrast. It is a fine addition to the Xiphion group, but yet very rare. On the New Zealand shelf in the temperate house are a few plants of *Veronica Hulkeana*, bearing a profusion of delicate lavender flowers on slender stems well above the foliage. It is extremely pretty, and although little known is well worth cultivation. It withstood the past winter out of doors in the herbaceous ground. In the south octagon is a fine plant of *Bossia linophylla*, rarely grown. Its height

is about 6 feet, and the gracefully pendulous branches are laden with flowers similar in colour to *Eutaxia myrtifolia*.

### THE PROCESSIONARY CATERPILLAR OF THE FIR.

CONSIDERABLE excitement has been occasioned in entomological circles by the appearance of this insect in two different localities in Kent, approximating to each other, however. Though reputed as British in some old books on insects, this species (*Cnethocampa pityocampa*), like its near relative *C. processionea*, has only been seen on the Continent by modern observers until the past year. Recent communications to entomological periodicals have shown how difficult it is to be sure that many of the captures of rarities are *bonâ fide*, since there are some dealers in natural-history specimens who hold to the maxim that business is one thing and honour another, and their anxiety to do business leads them to import foreigners occasionally and vouch for them as natives of our British shores. Hence the first announcement of the take by Mr. Batchelor of a number of nests of this Processionary met with a sniff of incredulity from most entomologists; but the most acute and able of our modern students in this direction—namely, Mr. Doubleday, has identified the species, and inclines to believe that the caterpillars were really taken as described.

The immortal Réaumur has well portrayed the allied species *C. processionea*, which is an Oak-feeder, and swarms near



*Cnethocampa processionea.\**

Paris in some years, as in 1865. Both have the same habit of moving in regular processions from the nest in order to feed, and Réaumur goes so far as to assert that having left the nest by a small opening, which only allows the caterpillars to pass in single file, they make a halt and reform, the procession being led by a dozen or so in single file, and then by a number of pairs, followed by rows of three, four, five, or six abreast. This peculiar arrangement has not frequently been noticed by entomologists in more recent times, though the main accuracy of the account given by Réaumur must be admitted. It is confirmed, indeed, in the case of *C. pityocampa* by Mr. Wittich, who, in a communication to the "Entomologist," states that at Nice, in the spring of the present year, he observed processions, varying in number from twenty to one hundred, walking sometimes three or four abreast, more usually by ones and twos.

Broods of *C. pityocampa* were first noticed last autumn near Southborough, in Kent, at which time they would be preparing to hibernate, for the species passes the winter in the larval stage. They were seen again in the spring, then feeding-up and devouring eagerly the Pine and Scotch Fir. In March

\* From Messrs. Cassell's edition of Figuier's "Insect World."

another collector found nests of the same species at Seal, on the Chart. As the insect is gregarious throughout the larval, and even in the pupal condition, it must be pretty noticeable; and should it show a tendency to increase and distribute itself would have to be reckoned in the list of our enemies. Moreover, the hairs of this and the allied species have a particularly unpleasant effect on the human skin, to which only a few individuals can bid defiance. This was a fact, curiously enough, known to the Romans, who forbade the administration of the hairs of the "moth of the Fir" as a poison under severe penalties, so at least the naturalist Pliny tells us.—J. R. S. C.

### MR. WILLIAM PAUL'S ROSES AT THE CRYSTAL PALACE.

I WENT down to the Crystal Palace, not a day after the fair, but alas! several days after the private view, and departed glories were but too evident. I went down specially to see Peach Blossom. How delightful at last to get a good sensible and descriptive English name! How delightfully redolent of "A Midsummer Night's Dream!" But alas! Peach Blossom was conspicuous for her absence. She had overbloomed herself, it was confided to me by an attendant. Princesses Beatrice and Christian there were in full glory and great abundance, but no Peach Blossom. Happily, now, there is no difficulty in making her acquaintance. Of the Roses that struck me most perhaps *Cœur de Lion* should be first mentioned, which is, I believe, of Mr. W. Paul's own raising; there was a very fine plant of it, the flower being of a bright fresh rose colour and of good solid substance. Firebrand disappointed me, there is hardly enough solidity; and Madame Lacharme, except as a white H.P., did not appear to be a first-class Rose. Louis Van Houtte was very grand, and Ferdinand de Lesseps as bright as ever. Richard Wallace, among the dark reds, appears to be an acquisition. Baronne L. Uxknill (will the names ever grow shorter?) was in much beauty, as an improved Jules Margottin, and Madame Bellon, which latter is of a colour much wanted and is also of good substance.

Among the Teas immense specimens of Céline Forestier were conspicuous; Le Mont Blanc, with its pretty Tulip-shaped blooms, by no means as white as its name imports; President, very grand, and Perfection de Monplaisir, a pretty light yellow with enough solidity, apparently, to make it an exhibition Rose. But where were Diana, St. George, and Peach Blossom? Echo, in the person of an obliging attendant, answered, At home; and no doubt during the season they will have there many admiring visitors.

The arrangement of the Roses was, of course, in every way worthy of Mr. Paul's well-known taste, and the public is greatly indebted to him for these so-much-longer-lasting springtide pot-Rose exhibitions.—A. C.

### AURICULA SEEDLINGS.

"G. S." will be glad of any little hint that may save him time and labour over choice seedlings, and therefore he is welcome to anything from my own experience that I can tell him. If he will sow Auricula seed as soon as it is ripe and dry, which will be in August, there is no need for anything like several years to elapse before the set of young plants, at any rate, begins to bloom. Seed sown August, 1874, and fairly grown-on (not neglected I mean), will produce many plants so large by August, 1875, as to bloom the ensuing spring. This looks very good work and quick, compared with the blooming of Tulips from seed. We cannot do this in less than four years, and I have seedling Tulips first blooming this year which are the last of sets sown in 1867.

Let me commend Auricula seed to be sown on a firm well-drained soil, say sandy loam or something free from perishable materials that will fall away and leave it light and unsubstantial. Sow the seed upon the soil, not under it, and have a square of glass with which to cover the pan when the seed is sown. Let it lie bare upon the smooth moist surface of the soil, and begin in three weeks or so to watch for the little white curly tails of the sprouting seed. Prick these in just overhead as they appear, and keep all genially moist during the lengthened period of germination. This sowing bare and pricking-in is a wrinkle impressed upon me under the tuition of patient George Lightbody. It secures the life of the valuable weaker seeds, which if put underground might never, of their delicacy, get a start at all.

The young seedlings will require keeping neither very

close nor very dry the first winter. In fact, they will want watching. If mosses grow, keep them down by watering with clear lime water. It will not hurt the higher organism of the seedlings. Kill the mosses early, or the decay of a larger growth going on round about the young Auriculas may injure some. Prick them out in spring as they get well into rough leaf, and mind they have no check by drought, or sun, or wind. Their roots for a long time are a good deal about the surface, often running along it, and formed from the leafy stem above ground, and so are peculiarly liable to suffer from dry exposure. By no means neglect or cast away the less inviting late and weak plants. Take pains with them in all faith and patience. These will often be a year behind the stronger in blooming, but may produce the best flowers. The coarser natures ever get on fastest. Keep the seed-pans a long time, for stragglers may be coming-up till sowing-time again.

I would not trust unbloomed seedlings to a common open border; but still, as I grow a good number, I cannot pot them all. Some, therefore, I plant out in frames looking north and filled with turfy loam to within a foot of the glass. For other lots I make up a bed looking east, boarded and raised above the ground level 6 inches or more. The plants thrive here with just a frame-light set on bricks at the corners to turn off wet.

It may be of interest to state that last autumn I put out rooted young plants of such free sorts as *Lovely Ann*, *General Neill*, *Lady Wilbraham*, *Beeston's Apollo*, *Lord Palmerston*, and others into an east border, and they have had no protection whatsoever from all the weather. None have died from frost or wet, but they bloomed later, and the plants are smaller and tougher, and the flowers were of less size than those in the frames. Of course I tried none of the more precious kinds; but I know the time was when many a good old thing, rare now, was grown in Lancashire and Yorkshire cottage-garden borders and sold by the handful, more for love than money, judging by the price.

Circumstances so much alter cases that I ought to say I live near the fresh and bracing moors, and so the air with me is pure and free and dry. But many years ago my father and myself used to rear our seedling Auriculas in the ready outdoor way I have spoken of, within a mile of Hull.—F. D. HORNER, *Kirkby Malzeard, Ripon.*

### AMONG THE PLANTS AT GLASNEVIN.

WHENEVER one takes a run to the Glasnevin Botanic Garden, no matter what the season may be, he is sure to come away gratified. He is sure to find the houses gay with plants in flower, many of them of special interest from their rarity, novelty, or singularity; and he will rarely come away without his attention being directed to something either absolutely new or with which he has not previously made his acquaintance. In fact, he will always find "something new, something to please, and something to instruct." When there is an hour to spare there is no more agreeable place to spend it; and in the early part of last week we availed ourselves of that relic of the past, the lumbering "bus, which, in the regrettable absence of the pleasant tram car, still plies between the Bank and the Botanic Garden, and after a not particularly agreeable ride we were soon face to face with the inmates of the Orchid house, which was quite lit up and gay with plants in flower. More especially was this the case as regards the stage which faces the entrance. Here were in flower stately specimens of *Vanda anavis*, and the finest variety of *V. tricolor*, *Phaius Wallichii*, and *P. intermedia*, all with numerous flower spikes; the lovely *Cattleya Mendelii* and *C. bogotensis*, *Epidendrum machrochilum*, and Blunt's charming variety of *Odontoglossum Alexandræ*, &c. The effect of the Orchids was by no means lessened by the soft voluptuous tints of some beautiful *Gloxinias* ranged in front, or a fine plant of the large-flowered variety of the brilliant *Anthurium Scherzerianum* which formed the centre "bit" and lit up the picture, and was in striking contrast with the dingy but most singular floral developments of the weird-like *Attaccia cristata* alongside it. Passing on to the next compartment, the eye was at once arrested by a fine plant of *Cypripedium caudatum* roseum, with some dozen or more flowers, each drooping perpendicularly two tail-like appendages or rather elongations of the sepals, each some twenty or more inches in length, hanging down like the dripping locks of the fabled syren. We regard this as about the finest and most striking of the genus, though for modest beauty commend us to the exquisite little

*C. niveum*, or the hardy *C. spectabile*. Here, too, we made the acquaintance, for the first time, of the new *C. Roezlii*. It is something in the way of *C. levigatum*, with twisted sepals and the sac or lip of a greenish yellow tint. *Vanda gigantea* was displaying its tawny, leather-like, and, to our taste, inelegant flowers, presenting, as regards beauty, a striking contrast to the exquisitely lovely blossoms of the *Dendrobium Devonianum* hanging opposite to it. *Dendrobium chrysotoxum* was also displaying its gay golden honours. We noticed also a good plant of *Saccolabium guttatum* in flower, a couple specimens of the showy and free-flowering *Cattleya Skinneri*, one of the curious *Lycaste fulvescens*, with its pendulous spikes of dull-looking tawny flowers, and an unnamed species of *Oncidium*, of the *Carthaginense* type, from Jamaica, with a fine spike of numerous brownish or chocolate-coloured flowers. The *Phalenopsis* were just over, more especially a fine *P. Schilleriana*, which showed the remains of a glorious spike. A plant of the small-flowered form of *Anthurium Scherzerianum* was flowering well in a suspended basket, and with the Pitcher-plant *Nepenthes* rambling over the roof, and suspending here and there its elegant amphoræ, lent a character and a charm to the Orchid house by no means out of keeping with its special occupants.

Leaving the Orchid house, and passing hurriedly through that ugliest of the Board of Works' ugly outcomes—the great Palm house—with a sigh that such treasures as it contains should be enshrined in such a casket, we delay for a moment in the adjoining cool range to refresh and admire the graceful elegance of that most elegant and graceful of drooping plants—*Grevillea Manglesii*, and the pale voluptuous beauty of the marvellously fine *Sikhia Rhododendron Hodgsoni*, which was in flower near it. This is a truly grand species, or variety perhaps we should say, for it differs at all events in colour from *R. Hodgsoni*, as figured in the "Bot. Magazine." This range was quite gay with other tender *Rhododendrons*, brilliant *Salvias*, numerous *Lachenalias*, and other gay-flowering plants. We noticed here, too, a most flourishing stock of that queen of Cape Orchids—*Disa grandiflora*.

Leaving this house, we notice in the adjoining border outside a fine specimen in flower of that interesting botanical curiosity *Megaacarpæa polyandra*, recently alluded to in these columns, and pass on to the long curvilinear range. In the stove division we were fortunate in seeing in flower two species of the noble genus *Brownea*—viz., *B. grandiceps* and *B. coccinea*. The first-named is here quite a tree, and bears its marvellous floral tassels, each as large as a child's head, in profusion; the second is not so robust a grower, neither are the pendulous flower heads so large, but the colour is more vivid and brilliant. This compartment was further gay with a number of other plants in flower, which we need not enumerate.

Among the stately plants domiciled under the central elevated dome of this fine range we noticed a fine specimen of the Chinese Palm, *Chamærops sinensis*, in flower. The adjoining or greenhouse division was quite in holiday trim with the quantity both of hard and soft-wooded greenhouse stuff in flower. Of these, one of the most striking and noteworthy was *Abutilon magapotamicum*, trained up one of the pillars, spreading freely above, and hanging its remarkably large striated bells in rich profusion. This, we think, is the largest-flowered and most striking of the genus. Observing to the foreman of the houses that this species was very striking from the comparatively great size of its flower. "Yes," he added, "and for being always in flower." The collection of succulents in this compartment is most extensive and varied, and wonderful are the quaint forms which it comprises. We must leave them, however, and hasten to the Victoria house, where were temporarily located the immediate objects of our present visit—namely, the curious *Sarracenias* or American Pitcher-plants, of which there were just then several species displaying their singular flowers.

Among those in flower were *Sarracenia rubra*, *S. flava*, *S. flava* var. *Catesbeii*, and, showing flower, an unique variety, which Glasnevin alone can boast of, and with regard to which we may, perhaps, devote a special article by-and-bye. Though not in flower, we were particularly taken with one of this remarkable collection, as in respect of its pitchers it is to our mind the one most to be prized of any. They are particularly graceful, and the operculum or lid far and away more elegant in form than that of any of its fellows. We could not make out the specific name on the label, and time then did not admit of making further inquiry; we hope, however, to do

so another day. Before parting with the *Sarracenias*, and closing this notice, we may add that the specimen of *Sarracenia purpurea* which has stood out for some years in the bit of artificial bog is not only healthy and vigorous, but just now also showing flower. A curious and interesting fact in regard to this particular plant is, that for months it is completely submerged and covered with water. Cold and continuous bathing evidently agrees with it.—(*Irish Farmers' Gazette*.)

## ALTERNANTHERAS AND COLEUS IN THE NORTH.

I SHOULD much like to know how far north *Alternantheras* and *Coleus* are found to answer in open flower beds? Frequent complaints of failure from correspondents living in the neighbourhood of Manchester and Liverpool induced me to make inquiries thereabouts, and I cannot do better than give a quotation from an answer received from a reliable source. "I never put out *Coleus* till the middle of June, always removing the cold soil and planting in sandy peat. Both *Coleus* and *Alternantheras* so treated were excellent with me last year." Now, this was done in a garden very near Manchester, and it is precisely the plan that is followed in the south; there can, therefore, be no doubt that the mischief was caused by a want of proper precaution. Let those whose plants have failed try again, remembering that no such tender plants can pass unscathed through the trying alternations of our climate in spring. Nothing is gained by early planting, and if spring gardening were only as common as it ought to be, no one would care to clear the beds for the summer plants till June. This, however, is a subject to which I hope soon to devote a paper; and I will only add here, that as we have no really good substitutes for the *Coleus* and *Alternantheras*, they are certainly worthy of such slight care and culture as it is plainly evident are only required to insure as complete success in the north-west as in the south.—EDWARD LUCKHURST.

## THE FORTHCOMING MIDLAND SHOW.

ALTHOUGH the announcement has been made that probably after all the Royal Horticultural Society may hold a provincial show at Wigan, yet as that is still in *nubibus*, and the preliminaries for the Great Midland Show are all settled, I thought it might interest the readers of our Journal if I turned aside on my way to Manchester to revisit the scene of the most successful provincial show the Royal Horticultural Society has as yet held, to ascertain a few facts connected with it, and at the same time to see the spring gardening which Mr. Quilter carries out on such a grand scale.

No private enterprise at all equal to this has ever been entered upon in the way of flower shows. The great provincial Shows of York, Leeds, Manchester, and other places, the Exhibitions at the Regent's Park, South Kensington, the Crystal Palace, and Alexandra Park are the efforts of societies and companies; but this Great Midland Show is the effort of one individual, who asks no guarantee fund, seeks no aid from others, but can say with Coriolanus, "Alone I did it!" And not only has he issued a liberal prize list of £1000, but he has already secured the co-operation of most of our leading exhibitors, while the arrangements he has made will show that the comfort and pleasure of all concerned have been carefully studied.

When the Royal Horticultural Society had concluded their Show, instead of allowing the large tent which formed the chief attraction of the Exhibition to be taken down, Mr. Quilter purchased it and converted it to his own use. One half of it has been divided off, heated with hot water, and has been made into an attractive conservatory; while the other half has been planted with *Rhododendrons* from the nurseries of Messrs. Standish and Co., at Ascot, somewhat in the style of those we are in the habit of seeing in the metropolis planted by the Messrs. Waterer. It will therefore not be difficult to again convert them into an exhibition tent, while the cricket field adjoining will afford ample space for the various supplementary tents that will be required, and also for the display of horticultural implements and necessaries. A room will be provided for those who may wish to write, meet their friends, &c., and everything done that Mr. Quilter's great experience and enterprise may lead him to consider needful.

Two years ago, when on a similar journey, I visited the grounds at Lower Aston and attempted to give, what is a very

difficult task, some idea of the wonderful extent and beauty of the spring gardening. I was enabled to contrast it this year with the recollection of it then. It has been, let me say, a most unfavourable season for it. The spring frosts have very much checked the growth of plants; and anyone who has watched the perfectly stand-still character of many things in their own gardens will not be surprised to hear that the Golden Feather Pyrethrum and some of the Pansies have considerably suffered. One defect I noticed last time has been remedied. The beds were too light—too much yellow and white; this year a great deal more of the dark purple Panay has been used in the centre panelling, and had the other plants not so much failed I think the effect would have been grand in the extreme. Even as it is, seen at a little distance nothing can be more charming than the jewelled appearance of the beds. It is only when you come closer that you see the gaps the frosts and unkindly weather have made. The beds being on the slant instead of flat, greatly enhances their beauty, although at the same time it makes the difficulty of keeping them in order the greater. The purple Aubrietia makes the best blue of that colour, the Forget-me-not being too delicate in shade and also too tall. Although Mr. Quilter has had these disadvantages to deal with, it is very doubtful whether any spring gardening at all equal in extent to this is to be anywhere met with.

It remains but to say that as far as the Exhibition is concerned five challenge cups have been added to the liberal list of prizes, value £25 each, and when won twice (not of necessity in successive years) become the property of the winner. One is for stove and greenhouse plants; two for cut Roses (one for amateurs and one for growers for sale); one for fruit, and one for vegetables. There will be a national lawn-mower contest, and the Birmingham Rose Show will be incorporated with the Exhibition, so that every element of success seems to have been attained.—D., *Deal*.

### NOTES AND GLEANINGS.

ALTHOUGH all growers of POTATOES have had some experience of the loss caused by the disease, yet it has seldom impressed them with the consequences which follow when it occurs where Potatoes are cultivated very extensively. These consequences were demonstrated during a recent trial in the Court of Queen's Bench. The defendant, Mr. Coupland, a Lincolnshire farmer, had entered into a contract with the plaintiff, Mr. Havell, in March to sell him "two hundred tons of Potatoes, grown on his land at Whaplede," at the price of £3 6s. 8d. per ton, to be delivered in September. Two hundred and fifty acres were actually planted at Whaplede, and it appeared that they would produce seven tons an acre, so that there was abundant land planted to raise the quantity contracted for. In August, however, the Potato disease attacked the crop and destroyed it, so that the farmer was unable to complete his contract. Therefore, although the farmer ought to have obtained 1750 tons, the disease rendered him incapable of supplying 200 tons. The question was whether he was excused in law. The Court gave judgment in favour of the defendant, the farmer, because the Potatoes to be delivered were to be Potatoes grown upon the particular farm, and no others could have been supplied; so that when that became impossible in consequence of the Potato disease the performance of the contract became impossible, and there was no default on the part of the farmer.

— THE constabulary returns, based upon information obtained from farmers and others, and revised by Boards of Guardians, show that it may be estimated that Ireland produced in the year 1873, 2,683,060 tons of Potatoes. The acreage under Potatoes has been decreasing for the last two years, but the produce in 1873 showed a large increase over 1872.

### THOMAS TUSSE.—No. 3.

TUSSE was at Braham Hall in 1557, and could not have remained there long, for at the end of eleven years he was in Essex, and in the intermediate years had lived at Ipswich, farmed in Norfolk, and resided at Norwich, buried one wife and married another.

It is certain that his farming at Braham Hall was a failure, and he attributes that failure to the high rent, for he says—

"With loss and pain, to little gain,  
With shifts to save, to cram Sir Knave,  
What life it is!"

Ill-success and his wife's ill-health hastened his departure—

"When wife could not, through sickness got,  
More toil abide, so nigh sea-side,  
Then thought I best, from toil to rest,  
And Ipswich try."

Apparently not a reasonable selection, for it is as "nigh sea-side" as Catawade. However, he had friends there.

"So was I glad, much friendship had,  
A time to lie."

It did not restore his wife, and there she died. Even her Christian name is unknown, and his only mention of her is in one line—

"There left good wife, this present life."

We hoped to have found a record of her burial, but in this we have been disappointed; the incumbent of each parish in Ipswich has kindly searched its register, but without finding the wished-for entry.

During his residence at Ipswich he seems to have composed his poetical notes on "Huswifry," for in the address "To the Reader" he says—

"Then hear with a widower's pen as ye may."

And he was only a widower whilst there residing. The first notice of the composition is in the register of the Stationers' Company, where in the year 1561 Thomas Hacket had license for "A Dyalogue of Wynnyge and Thyrnngge of Tusser's, with ii lessons for elde and yonge," and it seems to have been published the following year by his first publisher, Richard Totell, under the title, also in the Stationers' Company register, "One hundredth good poyntes of Husbandry lately maryed unto a hundreth good poyntea of Huswifry, newly corrected and amplyfyed."

The dedicatory epistle of the "huswifry" is to his "especial good lady and mistress, the Lady Paget," who was one of "the Lancashire witchea" when Anne Prestin. Only one more edition of this volume was published, and that was in 1570, and it is there stated to be "set forth by Thomas Tusser, gentleman, servant to the right honorable lorde Paget of Beudessert." Lord Molesworth thought that "The Points of Huswifry" should be reprinted, and a copy kept in every farm house, and so far as a sentiment of religion and an enforcement of thriftiness pervades the tract, it deserves commendation; but in its details of the employments and management of a household it is totally inapplicable to our time and usages.

No wonder that neither Tusser nor his wife could "more toile abide," for they, according to "The Points," were slaves and the drivers of slaves. All had to be up at first cockcrow; hemp had to be peeled for home-spinning; malt had to be made, ground, and brewed; the wife was to carve for all the servants, men and maids; the latter, if not cleanly, were to be made to "cry creak," for the wife was to carry "a Holly wand" for the purpose of beating them, but Tusser advises that

"Such servants are oftentimes painfull and good,  
That sing in their labour, as birds in the wood."

Bread had to be baked, dairying pursued in all its details, scouring and washing were daily tasks, men came to dinner whilst the plough-horses were baiting,

"Good sempsters he sewing of fimsy pretty knacks,  
Good huswives he mending and piecing their sacks."

Candles had to be made, hoga fed, cows milked, logs to be brought in at night, herb-medicines had to be made, and finally

"Declare after supper—take heed thereunto—  
What work in the morning each servant shall do."

for in those days master, mistress, and all servants on the farm had their meals together.

Such drudgery we have said would not now be applicable here, but we have just received some "pointa of housewifry," now enforced in America, and in verse too, that are not discordant with those of Tusser;—

"Up in the early morning,  
Just at the peep of day,  
Straining the milk in the dairy,  
Turning the cows away—  
Sweeping the floor in the kitchen,  
Making the beds up-stairs,  
Washing the breakfast dishes,  
Dusting the parlour chairs.

"Brushing the crumbs from the pantry,  
Hunting for eggs at the barn,  
Roasting the meat for dinner,  
Spinning the stocking yarn;  
Spreading the snow-white linen  
Down on the bushes below,  
Ransacking every meadow  
Where the red Strawberries grow.

" Starching their cottons for Sunday,  
Churning the snowy cream,  
Rinsing the pails and strainer  
Down in the running stream;  
Feeding the geese and poultry,  
Making the puddings and pies,  
Jogging the little one's cradle,  
Driving away the flies."

Whilst residing at Ipswich Tusser married a Norfolk woman, Amy Moon. She was seemingly much his junior, at all events she survived him. He plays upon her name by saying that she would always shine

"And never change, a thing most strange."

She was young, "a wife in youth;" expenses increased. "The child at nurse, to rob the purse," so he again betook to

farming. His wife seems to have objected to leaving her native county.

"For Norfolk wiles, so full of guiles,  
Have caught my toe, by wiving so,  
That out of thee, I see for me,  
No way to creep."

He became the tenant of West Dereham Abbey about the year 1564. The Abbey had but recently been suppressed, and its last Abbot was living in Tusser's youth time, dying in 1548.

The Abbey lands, manors, &c., were granted to Thomas Derham, Esq., of Crimlesham, in 32 Henry VIII., and he died possessed of them in 1554, but they remained to his descendants, but disputes arose and Tusser fled from the tenancy.

"Then left I all, because such brawl,  
I list not hide."



WEST DEREHAM CHURCH.

There seems to have been some temptation thus readily to leave a farm, which he admits was such "as heart could wish;" and the tempter was Sir Richard Southwell. He is described as a great favourite of Henry VIII.; was one of the visitors appointed by him of the monasteries in Norfolk on their suppression; was of the privy council to that king, Edward VI., and Queen Mary; was master of the ordnance and armoury, and one of the executors to Henry VIII.; he was also high steward of the Duchy of Lancaster. He possessed thirty-two manors in Norfolk, and profited, as one might expect, from the dissolution of the monasteries. It is not improbable that he offered a stewardship to Tusser; but whatever the temptation was, Tusser did not benefit by it, for Sir Richard died at the time, and is thus deplored:—

"O, Southwell! what, meanst thou by that,  
Thou worthy wight, thou famous knight,  
So me to crave, and to thy grave,  
Go hy-and-hy?"

Sir Richard had no legitimate son, and his seven executors seem to have not carried out his intentions for Tusser, so he avoided "the ravens" and sought a "ssier port." That port was Norwich.

The reasons why Sir Richard Southwell came "to crave" for Tusser was probably because he was patronised and commended by Thomas Lord Paget, who was married to Sir Richard's great-niece, bearing the very unusual name of Nzareth, and who

benefited by some of his property; for in 1572 Lord Paget nominated one John Poley to the rectory of Wood Rising, which had belonged to Sir Richard.

We hoped to publish a view of Tusser's residence at West Dereham, but the rector of the parish, the Rev. J. H. Clarke, writes to us that "there is nothing in the old abbey remaining which could be associated with his memory, as a fragment of the comparatively modern mansion, turned into a shepherd's cottage and laundry, is all which now presents itself without the old moated inclosure. The church, which is about a mile from the site of the Abbey, still presents very nearly the same aspect it would have in Tusser's time." Of that church, dedicated to St. Andrew, we publish a view from a photograph taken by the Rev. Canon Beechey, and for which we are further indebted to the courtesy of Mr. Clarke.

## THE HOLLYHOCK DISEASE.

(PUCCINIA MALVACEARUM, Mont.)

It is to be sincerely hoped that the fungus which causes the Hollyhock disease will confine itself to the tribe Malvæ of the natural order Malvaceæ, and that it will not extend itself to the other tribes of this natural order, so many members of which are cultivated for ornament in this country. If we form a judgment of the fungus from the habits of other species of

Puccinia, a sharp look-out ought certainly now to be kept on all species coming under Hibiscus, Abutilon, Gossypium, and other genera of Malvaceæ, for Puccinia umbelliferarum grows upon various Umbellifera; P. lychnidearum is common alike

in Lychnis, Sagina, Arenaria, &c.; and P. fallens is found on both Vicia and Trifolium.

Puccinia malvacearum first appeared in Chili on a species of Althæa; it next appeared in Australia, where it proved ex-



Puccinia malvacearum, Mort.

A. Hollyhock leaf infected with the disease (natural size).  
B. Pustules bursting through cuticle, with epidermal hairs, on which some of the spores are scattered. Enlarged 40 diameters.  
C. Section through pustule (or sorus), showing the clusters of uni-septate spores *in situ*. Enlarged 40 diameters.

D. Group of uni-septate spores, seated on the distinct stems, or peduncles. Enlarged 300 diameters.  
E. Hairs from Hollyhock leaf, to show proportion between the hairs and the fungus. Enlarged 300 diameters.  
All the figures enlarged with the camera lucida.

tremely destructive to the Hollyhock (*Althæa rosea*, a native of China). Last June it was recorded from France, whilst at the beginning of July it had reached this country, where it immediately commenced its ravages on our Hollyhocks with great virulence, and completely killed to the ground all the plants it attacked, both in private gardens and in nurseries. From the south of England it rapidly spread to the north, and during the early spring of this year in certain districts near London nearly every leaf of *Malva sylvestris* was blackened by this new pest. It has also been recently common in France, attacking the indigenous Malvaceæ.

The Hollyhock disease is remarkable for its extreme virulence, for on affected plants a black spot is not merely seen here and there as in common with many species of Puccinia, but the affected plants have every leaf blackened by these

obnoxious pustules or sori, which are entirely composed of uni-septate spores seated on stems as seen in section at c, magnified forty diameters. Every sorus contains more than ten thousand spores, and in the specimens sent for identification I counted more than a thousand sori on each leaf, therefore each individual leaf was capable of producing ten million perfect plants of the Puccinia. Figures altogether fail to give any idea of the enormous reproductive powers of this mischievous fungus, and as for a cure none is known or likely to be known. The only method of stamping it out appears to rest in at once taking up and burning root and branch of every infected plant.

The accompanying illustration with description, drawn from Nature with a camera lucida, will serve to give the readers of this Journal a good idea of the plant as seen under the micro-

scope, and the smallness of the pest and its spores when compared with the hairs and breathing pores of the Hollyhock leaf itself.—W. G. SMITH.

## MANCHESTER HORTICULTURAL EXHIBITION.

Those who are accustomed only to think of Manchester in connection with huge warehouses, smoky chimneys, dirty streets, and an impenetrable atmosphere of smoke, would be not a little surprised if they were to drop in as I did last week on one of their grand horticultural fêtes, and would be still more astonished were they to hear that the greater portion by far of the productions were sent from the neighbourhood—nay more, that exhibitors from Manchester can enter the lists with the most experienced plantmen in the kingdom, and beat them, as Mr. C. Cole did Mr. Baines at Bath last year; and therefore in recording this Show I feel that I am not recording a mere provincial exhibition, but one that has an interest for all horticulturists, and at which it is as great an honour to gain a prize as at any metropolitan exhibition.

Whitsuntide being kept almost universally as a holiday in the manufacturing districts, it was a happy thought of the Manchester Botanical Society to inaugurate an exhibition what should remain open for the whole week, and so afford the operatives an opportunity of enjoying a rational and elevating amusement when so many of a questionable character are presented to them. It is well known how enthusiastic were the Manchester operatives of former days in their cultivation of the *Auricula*, *Tulip*, &c., and to awaken or foster the taste the Society has now for seven years held these exhibitions. I have been pretty well used-up in exhibitions, but I can say that in some points the Show that is now being held at Manchester is far beyond anything that I have seen of late in London; while under the courteous yet firm administration of Mr. Findlay everything goes on as smoothly as possible, and Judges, exhibitors, and the general public testify to the excellence of arrangements, seconded as he is by an able Secretary and an efficient staff, with a thoroughly good working Committee.

The foremost place in the Exhibition must be given, I think, to the Orchids, a class which we have seen in the metropolis to have wofully fallen off, but which in and about Manchester is cultivated with great zeal and success. The class for nurserymen was well filled, Mr. Yates, of Manchester, taking equal honours with Mr. Williams, while that for amateurs was represented by some noble specimens. In the first-prize lot of Mr. Oswald Wrigley, of Bridge Hall, Bury, are some grand plants, such as *Phalenopsis amabilis*, *Vanda suavis*, *Odontoglossum Alexandræ*, *Cattleya Mendelii*, *Angulosa Clowesii*, *Calanthe veratrifolia*, and a grand mass of *Odontoglossum Phalenopsis*. In Dr. Ainsworth's were some notable plants of *Vanda suavis*, *Aërides nobilis*, and a *Mssdevallis Harryana*. Mr. E. Wrigley had fine plants of *Sobralia macrantha* and the lovely and rare *Odontoglossum vexillarium*; and Mr. Broome had grand plants of *Oncidium sphacelatum*, *Cattleya lobata*, and *Aërides Lobbiani*.

In the nurserymen's class, to which contributions came from Mr. Yates, Mr. Williams, Messrs. Rollisson, and Mr. Spence, were fine plants of *Cypripedium barbatum* and *caudatum*, *Dendrobium densiflorum*, *Vanda tricolor*, *Lælia purpurata*, *Oncidium sphacelatum*, *Odontoglossum citrosum*, *Vanda suavis* and *tricolor*, &c.; while Mr. Spence had a large quantity of the lovely *Cattleya Mossii* of various shades of colour and in excellent condition. In the same large conservatory were arranged the grand stove and greenhouse plants contributed by Messrs. Cole & Son, Jackson & Son, and others. The former had magnificent plants of *Anthurium Scherzerianum*, *Aphellexis humilis rosea*, *Erica Cavendishii*, *Azalea Magnificens* and *Conqueror*, *Ixora coccinea*, and *Cycas revoluta*. They had also the very best box of cut blooms of stove and greenhouse plants I ever remember to have seen. There was the lovely and pure *Nymphaea dentata* with its snow-white petals, the gorgeous and glowing *Musa coccinea*, beautiful bunches of *Vanda teres* and *Vanda tricolor*, the rich yellow of *Allaunda grandiflora*; and for rarity of bloom and variety of colour it would have been impossible to excel and difficult to equal this box. Amongst those contributed by amateurs were some excellent boxes, that shown by Mr. Wrigley containing nine Orchids out of the twelve blooms exhibited.

Nor must I omit my meed of praise to the hand bouquets. This is a subject I have much studied, and I hope know a little about; and I willingly testify that the very best, taking them altogether, I have ever seen (taking into account their number) were exhibited here, especially those contributed by Messrs. Yates, of Manchester, Mr. Wrigley, and the Messrs. Turner, of Liverpool and West Derby. There was a lightness and elegance about them that was positively charming; all vulgarisms were

absent, and the flowers employed were rare and beautiful, Orchids entering largely into their composition; and although in a few cases somewhat large, yet they were not more so than fashion demands, and they were beyond all praise for their lightness and elegance.

The greenhouse plants, tree Ferns, hardy shrubs, Roses, &c., were arranged in the large tent with which visitors to Manchester are familiar. It was most tastefully arranged, the long vista being broken up by tree Ferns, &c. The most conspicuous object on entering was the collection of pot Roses furnished by Mr. Charles Turner, of Slough, which are exhibited in that perfection he so well knows how to attain. Amongst his large plants were grand specimens of *Juno*, *Charles Lawson*, *Alfred Colomb*, *President*, *Souvenir d'un Ami*, *Miss Ingram*, and *Victor Verdier*; whilst amongst the fifty were beautiful little plants of *Edouard Morren*, *Madame Margottin*, *Duke of Edinburgh*, and *Madame Victor Verdier*. Messrs. Lane, of Berkhamstead, had also fine plants of the best sorts, amongst them *Souvenir de Paul Neron*, *La France*, *Madame Margottin*, *Alfred Colomb*, and *Madame Victor Verdier*. It would seem that the Manchester folks cannot master the difficulties they labour under in the cultivation of a flower which is so greedy of pure air as the Rose.

Passing down the tent I noticed some grand plants of *Azaleas*, exhibited by Messrs. Cole & Son, Lane & Son, and Mr. Charles Turner, amongst them *Eulalie Van Geert*, *Empress Eugénie*, *President*, &c., while Mr. Turner's contained some of the newer varieties. *Pelargoniums*, as at the London shows, were indifferently represented—a marvel to me when one regards their exceeding beauty and their freeness and length of flowering. The best as far as size was concerned, was exhibited by Mr. Rylance, nurseryman, Ormskirk, and contained good examples of *Kingston Beauty*, *Betrothed*, *Le Vésuve*, *Beacon*, &c. Mr. Turner's were smaller and of finer quality; amongst them were *Imperator*, *Pompey*, *Pericles*, *Brigand*, and *Claribel*, varieties which have emanated, as have, indeed, most of the good sorts in cultivation, from his well-known establishment.

There were some excellent collections of Ferns, both British and foreign, contributed by Messrs. Pearson, Mr. Crow, Greenheys, Mr. Shuttleworth, and Mr. Rylance. Amongst the British Ferns were fine specimens of *Athyrium F.-f.*, *plumosum* and *todeoides*; *Lastrea Filix-mas angustatum*, *Barnesii*, and *cristatum*; *Polystichum aculeatum*, and *Athyrium Filix-f. grandiceps*; while in the foreign Ferns were *Todea superba*, *Brainea insignis*, *Gleichenia superba*, and *Lomaria cycadæfolia*. Some of these, the collection of Mr. Crow especially, did great credit to the exhibitors, for his are grown in the very heart of Manchester, and they showed what perseverance and intelligence can do in overcoming difficulties.

There were some excellent hardy shrubs contributed by Messrs. Caldwell & Sons, and Mr. Shaw. Those of the former were especially fine, and contained *Retinospora plumosa aurea*, *Buxus variegata*, *Thujopsis borealis*, *Golden Queen Holly*, *Broad-leaved Holly*, &c. The far end of the tent was occupied with collections of hardy *Rhododendrons*, exhibited by Mr. Yates, of Manchester; Mr. R. S. Yates, Messrs. Lane & Sons, and Messrs. Waterer, of Bagshot. They proved a grand feature of the Show; their varied colours and rich glossy foliage make them very attractive. Amongst the better kinds were *John Walter*, *Richard Waterer*, *Exquisite*, *Titian*, *Mrs. John Clutton*, *Magnificum*, &c.

For new plants there were some valuable prizes offered, and the first prize was gained by Mr. Shuttleworth, amongst whose exhibits were the beautiful *Pandanus Veitchii*, *Vriesea reticulata*, *Encelophartos villosus*, and *Draena metallica*. There were also nice collections of *Palms*, plants for dinner-table decoration, &c.

I have thus enumerated the most salient points of this excellent Exhibition, but there were many other matters of interest—collections of succulents and herbaceous plants, *Palms*, *Ericas*, *Crotons*, &c.; some beautiful vases of skeletonised leaves prepared by Mr. Ray and some pupils who have managed by the directions given in his book to approach somewhat to the beauty he has attained; but it would not be possible in the space allotted me to notice more than I have done, and I hope it will be sufficient to show how very successful is this Whitsuntide Exhibition of the Manchester Society. Long may it flourish! —D., Deal.

## SKELETONISING LEAVES.

On looking over the gardens of the well-known Squire of Blankney the other day, my attention was drawn to a piece of work by Mr. Robert Frisby, son of the able and popular gardener. This was a case of skeletonised foliage, on which the young gardener has devoted his spare evening hours over a period of several months. The way in which he has thus far accomplished his work is in the highest degree creditable to his patience, perseverance, and manipulative skill. The foliage is almost entirely composed of different kinds of evergreens, the venation of which is of sounder texture than tropical plants,

and from which the more perishable parts of the leaves separate more cleanly, leaving a network perfectly clear and well defined, which, on close inspection, is not always the case with skeletonising. In this case every leaf is absolutely perfect, a blemish, even of the slightest, not being admitted, and this if the spray has cost six months' care in preparation. The group for finish and arrangement is very beautiful, and worthy of a place at some of the great exhibitions, whither, perhaps, it may eventually find its way. When we find a gardener devoting his leisure to a work of this kind, demanding the exercise of the best qualities, it is proof not only that his heart is in his work, but that he possesses the means and a will to use them in achieving success in his calling. Young men generally might do much worse than spend a portion of their leisure in a recreation so elegant, interesting, and instructive. —J. WRIGHT.

**PRIMULA IMPERIALIS.**—Some years ago I read, in Wallace I think, of this most gigantic Primrose, which grows on one solitary mountain in Java. Surely such a plant is worth looking after. If some enterprising importer could make a fraction of what has been made by *Primula japonica* he would no repent his labour. Seeds or plants might be had through a Dutch resident without the necessity of sending out a collector. —G. S.

### MR. GEORGE GLENNY.

On the 17th inst., after a few days' illness, at Gipsy Hill, Norwood, died GEORGE GLENNY, aged eighty-one years.

He laboured earnestly and beneficially to promote gardening in all its departments, but especially floriculture, and so much did we appreciate his judgment that in 1851 we placed a portion of our columns devoted to "florists' flowers" under his control. Here he allowed his judgment to be unduly warped, which led to a separation, and then we, in common with Dr. Lindley, were the subjects of his inveterate vituperation. About a twelvemonth since he sent us his photograph portrait, which we accepted as a peace offering; therefore we will only add as a salutary lesson to our young readers that Mr. Glenny prevented his abilities being employed more extensively by his self-laudation and bitter prolonged expression of animosity. These were defects which no one wished to endure, and which would have made him suffer still less of prosperity if he had not pursued unweariedly literary labour.

He was a native of London, and there apprenticed to a watchmaker, but acquiring a taste for Tulips from seeing a bed of them at Walworth, he devoted himself to gardening, and especially floriculture. Here he was so successful, that at an entertainment given to more than fifty friends at his residence at Worton he placed before each a silver cup which his flowers had won. He relied, however, upon his pen more than upon his spade and trowel for bread-winning, and in 1820, when twenty-seven, he became editor of the "British Luminary;" then wrote for the "British Press;" and soon became editor of the "Royal Ladies' Magazine." These were failures; but in 1832 he commenced the "Horticultural Journal," which lived on until 1839. Then he started the "Gardener's Gazette," which was extinguished by Dr. Lindley's superior "Chronicle;" but we can only find space for the names and dates of his literary legion. "Garden Almanac," begun in 1847; "Abercrombie's Every Man His Own Gardener," with notes, 1848; "Gardening for Cottagers," and "Gardening for the Million," 1849; "Catechism of Gardening," by Rev. J. Edwards," 1849; and an edition arranged for schools in 1855. "Handbook of Practical and Landscape Gardening;" "Handbook of Flower Gardening and Greenhouse;" "Handbook of Fruit and Vegetable Gardening," 1850; "Golden Rules for Gardeners," 1851; "Quarterly Review of Horticulture," 1853-5; "The Flower Garden," one of Richardson's Handbooks, 1853; "Farming for the Million," 1854; "Gardener's Every-day Book," 1856; "Abercrombie's Pocket Journal," 1857, which was translated into Welsh in 1860; "Companion to the Garden Almanac," 1857; "Handy-book of Gardening," 1858; "Fruits and Vegetables," 1859; "Culture of Flowers," in twelve numbers, 1859-60; "Illustrated Garden Forget-me-not," 1860; "Midland Florist, New Series," 1861-3; "International Exhibition Remembrancer," 1863; "Du Breuil's Fruit-culture," 1872.

His most original work was "Properties of Flowers and Plants," published first in his "Horticultural Journal," but of which when published in a collected form we do not remember

the date of the first edition. The second edition is dated 1859. In this little volume he portrayed the model forms to be aimed at by cultivators for exhibition. Let no one think that the numerous works above enumerated contain new information; they vary in name and arrangement, but the later publications are copies of their predecessors; for he was obliged to write for the sake of subsistence, and was the worst of copyists, for he did not seek for new information, but copied himself.

From Worton, we believe, he went to Fulham, lived there many years, and then removed to Gipsy Hill, where he died. If he had been as indefatigable in pursuit of fresh knowledge as was his equally voluminous contemporary Mr. Loudon, he would have been a meritorious writer, for he was quick of observation, and had a just appreciation of what was interesting. We can give but one illustration. In 1860, writing about a market garden at Fulham, formerly cultivated by Mr. Fitch, but then by Mr. Clarke, he notes that in a single year it produced 5000 punnets of forced Radishes, and 288,000 hands (bunches) of unforced; 3000 dozen bunches of Greens, 26,000 dozen of Cabbages, 400 dozen bunches of Wallflowers, 800 dozen bunches of Moss Roses, and 400 dozen of hand-glass or early Cauliflowers. He saw 23 acres of Dwarf Kidney Beans, and knew of 600 bundles of Asparagus being sent to market in one day. Ten thousand scores of Lettuces were sold between the 21st of May and 23rd of June.

At one period, we are told, he edited the "Gardener and Practical Florist," and at another "Glenny's Journal," but they are not remembered by us. During the concluding years of his life he wrote on popular gardening for "Lloyd's Weekly Newspaper." He contributed by his vituperative denunciations to have the restrictions removed which closed Kew Gardens as a place of popular resort. He was one of the originators of the Gardeners' Benevolent Institution; and when he was chairman of some Institution we remember him riding with legs enveloped by an appropriate bearskin, and an appearance of great self-appreciation in his two-horse phaeton.

### NOTES ON VILLA AND SUBURBAN GARDENING.

The time for planting bedding-out plants in the places where they are to form the great display of the flower garden, has now arrived, and it cannot be too strongly urged upon those who have this work to do, that system in arranging the colours is absolutely necessary to complete success. By those who have paid much attention to this part of the gardener's business it must have been noticed that different *artistes* produce different effects with the same plants, and this, upon a careful examination, will be found to arise more from the judicious arrangement of the colours than from any other circumstance. It is also easily seen that this subject receives very little attention generally, although nothing can be more important. Thus, what can be more beautiful than some of the white Verbenas or the yellow *Calceolaria*? but place these two sorts together, and the pure white of the Verbena is quite destroyed. Neither should colours be placed in violent contrast, because richness of effect is not produced by contrast, but by harmony. Thus, the scarlet Verbena or Geranium harmonises with the purple Verbena or any of the blue Lobelias; these again with the Erysimum, or any of the orange-coloured flowers. The great want of a good violet to harmonise with the numerous yellows is to be supplied by employing the beautiful *Salvia patens*. In some cases, however, especially in gravelled terraces, complementary or contrasting colours are desirable, and these are more easily managed, there being a well-known method of finding the true contrast to any colour, which is this: Take a piece of paper of the colour of the flower for which it is desired to find the contrast, or a petal of the flower itself; cut a small circle out of it, which lay upon a sheet of white paper; gaze on it steadily for a minute, and then, without allowing the eye to close, look upon another part of the paper, where a circle or spectrum of another colour will be distinctly seen, and this will be found the true contrasting colour. Without attending to these rules the beautiful variety among our bedding-out plants is almost useless; but with care every shade of colour may be made to add to the beauty of the whole.

Plant *Mesembryanthemums* out in a warm corner exposed to the sun, and on rockwork raised a little from the surface; they prefer light sandy soil. Many of the kinds will in such a situation become objects of great beauty, more especially if the summer prove to be a sunny one. A small annual species, named *M. pyropæum*, or tricolor, is a very beautiful plant for the purpose; being, however, very tenacious of life they will live almost in any sort of soil. As might be expected in so large a family, some are compact growers, while others are very straggling. To keep such as *M. uncinatum*, *M. dilatatum*, or

*M. tenuifolium* dwarf they must have their branches pegged-down on the soil. This is not only a good plan of making compact specimens, but also a good plan whereby to propagate them, for if the operation be performed in spring every branch will root in a few weeks.

To check the growth of the foliage of bulbous plants is decidedly injurious to them. After flowering the leaves should be stimulated to make strong growth under the influence of bright light, and this should be continued till they show symptoms of having passed maturity, then moisture should be gradually reduced until they are brought to a state of rest. It is therefore wrong to cut off the foliage of hardy bulbs when they have done flowering, and hurtful, although sometimes necessary, to remove them to another place until it can be done without greatly disturbing the roots.

Moderate disbudding, or rather thinning the shoots of fruit trees, must be persevered in; but they must now be removed with a sharp knife and not broken off, as the shoots are acquiring consistency. Some of the strongest shoots of Peaches intended to remain will require to be tacked-in. Never forget that to realise the full benefit of the operation it must be done continually and gradually. Serious injury will always result from sudden and heavy thinnings either of the buds or young shoots. Stop the strongest shoots of Vines a joint beyond the fruit, and commence nailing-in. The fruit of the Peaches should be thinned-out where necessary. Apricots, being generally used for tarts, must be left until they are large enough for that object. Do not forget to use every available means to keep Strawberries in a free-growing state by timely applications of water and frequent surface-stirring.

Cucumbers which have been planted-out and filled their frame will be greatly benefited by a good soaking of manure water in a clear state, particularly when the soil is of a light and open texture, which should always be the case with Cucumbers. The liquid manure should be transparent and of the same temperature as the bed when applied, and care must be taken to let none fall on the leaves in watering. If the fruit is required to grow very large, care should be taken to select the best-formed female flowers near to the main stems, and the rest should be thinned off.

To cover your trelliswork or any exposed piece of wall for the summer, plant any of the following, or all of them intermixed if you prefer it: *Tropæolum aduncum* (yellow), *Cobæa scandens* (purple), *Calampelis scaber* (orange), *Loasa aurantiaca* (red), the *Convolvulus major* (various), *Lophospermum Hendersoni* (rose). If you prefer less-strong-growing plants, substitute *Maurandya Barclayana* (blue), *M. semperflorens* (rose); there is also a white variety, and *Clematis Jackmanni* (violet), *Tropæolum minus* (orange), and *Lophospermum scandens* (rose).

Put in successional crops in the kitchen garden; prick-out Celery; stop the first crop of Peas and Beans; roll gravel walks; mow, sweep, and roll lawns; and look after every out-of-the-way place, the nooks and corners.

What a delightful rain we have had, and just when its presence was wanted! Independently of stirring the surface of the ground, stiff soils were beginning to crack into fissures even where mostly covered with vegetation. Where the ground was previously well broken the crops will have obtained greater advantage from the rain.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### HARDY FRUIT GARDEN.

We are now becoming aware of the extent to which both wall and standard fruit trees have been injured by frost. Plums on the wall, which seemed to have set pretty freely ten days ago, have mostly become yellow and dropped off; only a very few are swelling. Some varieties of Pears have set well, others are a failure. Cherries on the wall are a full crop, on pyramid trees they are a partial failure. Apples are a crop, though some sorts have suffered. We have been looking over the trees to destroy the caterpillar of the Lackey Moth. If this pest is not destroyed at once the trees may be injured. Our mischievous friends the sparrows seem to have been beforehand with us, and have made havoc with some of the clusters, leaving parts of the skins behind them. They may eat other sorts of caterpillars and insects, and thus to some extent repay us for the woful damage they do to our early Peas, Lettuce, and other tender young crops in the early spring months.

In a recent number it was stated that Strawberry Amateur was the only one that had suffered from frosts destroying the blossoms. Since that time Sir C. Napier and one or two others have also been slightly injured from the long-continued frosty winds. When fine exhibition fruit is what is desired it is necessary to thin out the fruit, and this is best done as soon as the petals begin to drop off, removing small and badly-formed fruit, allowing only about a dozen to remain on each plant. Instead of allowing these to lay on the ground it is better to support them a little above the leaves with small branches of Elm, Beech, or some similar material. A neat Strawberry support is made of galvanised iron wire. It is intended that the fruit

should rest on a sort of network, and at first sight these seemed to be a very suitable article, but in practice the small branches are the best.

The barometer is falling, and various signs prognosticate rain, which is much needed. In our light soil it will be necessary to water the Strawberry beds if no rain come in a few days; they will have a good soaking, and be mulched with some rotted manure afterwards. As Mr. Radclyffe pointed out many years ago, the best Strawberries are obtained in hot dry weather; this is quite true if an almost unlimited supply of water can be poured over the roots. All our plants are runners of last year; we do not care to trust to older plants for the best fruit.

There is no excuse for weeds growing anywhere this year, either in the kitchen-garden quarters or the fruit-tree borders. A few are springing up on paths, but they can readily be pulled out after a shower. Autumn-planted Cauliflowers seem to require water at the roots as well as other crops, but there is not much advantage in doing so while the night temperature is so low; with warmer nights it might be applied with greater advantage.

### FORCING HOUSES.

*Vineries*.—So much has been noticed of the principal details of the work in this department that it may seem like repetition to say more this week, but we would urge on all who attempt to grow either fruit or flowers to give attention to the most minute details of the work. For instance, Grapes that have to hang some time in summer after they are ripe frequently become coated with dust, in great part through sweeping the paths when they are dust-dry. This ought to be avoided; if it is necessary to sweep, do it carefully, after a little water has been sprinkled over them. Small house spiders are also a serious hindrance to those who are desirous of keeping their bunches clean and having a perfect bloom on the berries; they insinuate themselves into the centre of the bunches, and work their webs outwards. These webs are not easily removed without injuring the bloom. If the spider can be detected a cedar pencil may be thrust in, when it will sometimes let itself out. Giving air to the house is another matter which may be alluded to; this is one of the principal details. Until the fruit is quite ripe we do not care to have the temperature below 60° at night. In cold weather the house must then be pretty well closed at night, but should the sun rise bright and clear in the morning the ventilators should be opened freely at 6 a.m., so that any damp arising from the ground may have free egress and that thorough ventilation may be secured. A high temperature in the day is not at all desirable at this time.

The thermometer has run up very high in the daytime, and the nights are warmer. This ought to cause watchfulness in the late houses. Red spider may be looked for as soon as the fruit is set, or even before this. With a sponge and soapy water it may be washed-off by hand, as it is dangerous to paint the hot-water pipes with sulphur until the berries have arrived at the stoning period. The first of our bunches that were in flower have set well, and the leaves are free from spider. When the fruit has set give the border a thorough soaking with water, after the surface has been dressed with some rich manure. Attention must be given to setting the fruit; some sorts which succeed well in a cool house are at the same time shy setters. Muscat Hamburg does not always set well; but a gentle tap on the stalk of the bunch when the flowers are expanding, about twice daily, will cause the pollen to be distributed, and the fruit will set freely. Another and distinct type is Royal Vineyard, an excellent-flavoured Grape, but very shy in setting its fruit. One peculiarity of it is that a small globule is to be found on the stigma of each flower as soon as it opens. A good plan is to draw the bunch gently through the hand to distribute the moisture.

### PLANT STOVE.

Where there is only one house for growing young plants, flowering specimen, and foliage plants, persons are often driven to their wits' end to know which is the best treatment to adopt. You want to preserve your flowers, and to do this a rather dry atmosphere, with a lower temperature than that suitable to heat-loving foliage plants, is desirable. In such a case the best way to tide over the difficulty is to allow a mean between the two. Many East Indian Orchids which would last in flower about ten days in a hot moist atmosphere will continue in beauty a month in a cool house. Potting small Palms, Dracæas, &c. At almost every season of the year, except in the dead of winter, something requires repotting. We may allude to Dracæas. After a time these plants become leggy, and may be useful to stand on the centre of a stage, or in any position where the stem may be covered with other plants. In some cases it is desirable to increase the stock. In this case the top may be cut off, but before doing so cut the stem half through, and bind some damp moss round the place. Roots will be emitted, and the stem can then be cut through entirely and the top be potted. The stem that remains may then be cut into half-inch lengths, potted in light soil, and placed in a brisk heat. A bottom heat of 90° suits them.

Green fly has been troublesome to us, but wherever they ap-

peared the insects were washed or brushed off. It is dangerous to fumigate with tobacco smoke; we have had many choice Orchids and Ferns injured with this. Thrips are difficult to dislodge when once they obtain a hold, but there is no better way than to wash them off with soapy water. It is well to be careful with all ornamental-foliaged plants that are required for dinner-table decoration: the foliage should be perfectly clean, and the plants in a condition to be placed on the table at a moment's notice. Many persons do not select the most suitable plants for this purpose. All with broad foliage ought to be rejected. A few of the more slender-growing *Dracenas* may be admissible, but as a rule all those with feathery or finely-divided foliage are the most suitable. The collection shown by Mr. Wimsatt and Mr. W. Bull at South Kensington on the 13th of May contained some fine things. If *Cocos Weddelliana* ever becomes cheap enough it will be by far the best Palm. *Demonorops plumosus* is also very fine. *Aralia Veitchii*, a scarce plant, and *A. leptophylla* have finely-cut leaves. Nice healthy plants of *Adiantum cuneatum* are easily grown, and can be worked-in in almost every style of house or table decoration.

#### FLOWER GARDEN.

With the exception of *Coleus*, *Iresine*, and *Alternanthera* all the bedding plants were out on the 23rd. The plants were well watered before putting-out, and the surface of the beds, which was like dust, received some water before planting. Notwithstanding this the plants, especially *Calceolarias*, were suffering from the drought; it was decided to water them, but a drizzling rain fell at intervals on Saturday, and the moist atmosphere made everything look fresh and beautiful. A very large portion of our time has been taken up with planting-out, and mowing the lawn to cut the Daisies.—J. DOUGLAS.

### PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

JUNE.	JUNE
Glasgow and West of Scotland .. 3	Guildford .....
Undercliff .....	17
St. Austell .....	17, 18, and 19
Coventry and Warwickshire .. 8	Fermoy .....
Bath and West of England .. 8 to 12	24
Leeds .....	25 and 24
10, 11, and 12	Nottingham .....
Gloucester and Cheltenham .. 11	24
Royal Gxfordshire .....	R.H.S. of Ireland ..
16	25
Gosport .....	Cambridgeshire ..
17	25
Chertsey .....	25
17	25
Burton-on-Trent .....	Ipswich and E. of England 25 and 26
17	Kingston and Sarbiton ..
Thorne .....	25 and 26
17	Devon and Exeter (Roses) ..
Jersey .....	26
17	Boston .....
	30 and July 1

### TRADE CATALOGUE RECEIVED.

Charles Verdier fils, 12, Rue Duménil, Paris.—*Rosiers Nouveaux*.

### TO CORRESPONDENTS.

\*. It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

BOOKS (M. J. R.).—Lowe's English and Sir W. Hooker's "Exotic Ferns." They are high-priced; any bookseller could ascertain their cost.

LAMUM PURPUREUM VAR. AUREUM (J. F.).—We do not know where it is to be procured. Some Dublin firm might inform you.

DENDROBIUM CULTURE (A. Lower of Orchids).—You have up to the present time acted quite wisely with your *Dendrobiums*; they should, however, now be removed to your stove. Fasten them upon blocks of wood, and hang them head downwards; when they have grown a little reverse their position, and if you keep them properly moistened all will be well.

GARDEN ENGINES—ALPINE AURICULAS DIVIDING—CLEMATIS BREAKING FROM BASE—COARSE GRASS IN LAWN (F. J.).—As you do not wish to go to the expense of a barrow water-engine, we cannot recommend anything we have in practice found superior to a good syringe. There is the suction garden engine or syringe, which draws the water from a bucket, and is more powerful than a syringe, and one at 50s. would suit you. We cannot name anyone in particular, nor depart from our rule not to recommend dealers. Border Auriculas are best divided now, or directly the flowering is past. The *Clematis Jackmanni* broken off at the ground will probably shoot again from

the root, dependant, however, on the plants having on the root-stem or collar dormant eyes. The coarse grass on the lawn will to some extent be reduced by frequent mowings; but the most effectual riddance would be to root-out the coarse grasses, which would prevent their outgrowing the finer kinds, giving room to and thereby encouraging their growth.

MALFORMED CUCUMBER (*Ramallo*).—As the specimen sent and others on the same plant are similarly eccentric, we think that that plant must be overvigorous, for there is an abortive attempt at the end of the fruit to form another; the flower is fresh and persistent; there are leaves around it, and in the centre of the flower is a partially formed but white Cucumber. We never saw a similar instance. The variety was sold as Cuthill's Black Spine, but this must have been a mistake, for the spines on the specimen sent to us are white.

HOLLYHOCKS DISEASED (G. W. J.).—It is *Puccinia malvacearum*, of which you will see an account and engravings in a previous page.

DESTROYING AMERICAN BLIGHT (S. E.).—The receipt you had from "The Orchardist," published in 1865, is, as your experience shows, a valuable one, having effectually cleared a Dumelow's Seedling Apple twenty-six years of this pest. The receipt may be useful to some of our readers:—"Half an ounce corrosive sublimite, reduced to fine powder by beating with a wooden hammer, and put into a three-pint earthen pipkin with a glassful of spirit of hartshorn, stirred well together, and the sublimite thus dissolved. The pipkin then filled by degrees with vegetable or common tar, and constantly stirred till the mixture is as intimately bleended together as possible. The mixture applied with a hard brush to the parts infested. The effect on parts where the bark has been cut away, or where branches have been lopped-off, is marked—most invigorating and healing—the new bark comes with the healthiest appearance, and soon laps over the exposed wood." Answering so well for the older tree, we do not see why it should not answer for the young ones if applied, as we presume it was in the former case, when the tree is leafless. During growth you may syringe the trees forcibly with a solution of soft soap, 4 ozs. to the gallon, or dilute paraffin oil with an equal quantity of water, and apply with a brush to the parts infested, keeping it from the leaves and shoots of the current year's growth.

PEACH TREES INFESTED WITH APHIDES (*Idem*).—Syringe them on a calm evening with tobacco water, adding six gallons of water to one of tobacco juice, thoroughly wetting every leaf. The liquid should be strained before use, so that it may not clog the syringe. Tobacco water may be made by pouring a gallon of boiling water on 2 ozs. of the strongest tobacco covered up until cool, and then strained before use.

LILY OF THE VALLEY NOT FLOWERING (A. E.).—The Lily of the Valley may not have flowered owing to the plants being in a dry position and not well supplied with water. Water during summer with weak liquid manure, and apply a top-dressing of rich compost in autumn after the leaves are decayed and cleared off. The want of colour in the *Maréchal Niel* Roses is probably due to a deficiency of light, the plants not in vigorous health. Give weak liquid manure at every alternate watering, and all the light practicable.

HEATING A STOVE (*Idem*).—You will require for heating the greenhouse, which you propose converting into a stove, four rows of 4-inch piping along the front—that is, two rows with their return, which will require 64 feet, and two rows along one end, which will take 24 feet more, so that you will need to add to your present stock, though it may be that with elbows and syphons you will have enough. The boiler we should have outside, and take the pipes across one end to the front, dividing the flow there into two branches, and with a syphon at the other end come back with two pipes immediately under the flow, and across the end in one pipe to the boiler. A small boiler only will be necessary. For wintering bedding plants we should have a half-span-roofed greenhouse or pit, and heat it with hot water from the same boiler. Half the quantity of piping would suffice for it, it being a proportionate height and width. Orchids that would succeed in your stove are *Acridies japonicum*, *Acridies rubrum*, *Cologynne cristata* major, *Barkeri*, *Skinneri*, *Cattleya citrina*, *Cymbidium obsecurum*, *Cypripedium Maulei*, *C. venustum*, *Dendrobium chrysanthum*, *D. nobile*, *Epidendrum amabile*, *E. macrochilum* roseum, *E. vitellinum* majus, *Lelia purpurata*, *Cattleya Mossii*, *Dendrobium Bensoni*, *D. Parishii*, *Lycaste Skinneri*, *Masdevallia Harryana*, *Lelia superbieana*, *Maxillaria Harrisoni*, *Oncotoglossum Alexandrie*, *O. grande*, *Calanthe vestita*, *Oncidium ampliatum* majus, *O. macranthum*, *O. apicalatum*, *Phajus grandifolius*, *Pleione maculata*, *Trichopilia tortilis*, and *Zygopetalum Mackayi*.

GOOSEBERRIES DROPPING (*Idem*).—The fruit is dropping, probably from the effect of the late frosts, as we observe in the case with many, though at the time they were not apparently injured. In some instances the growths have been seriously attacked by a species of *Acarus*, which has caused the leaves as well as the fruit to fall.

PIECEWORK (Emily C. H.).—It is difficult at any time, and especially in the present disturbed state of the labour market, to give any definite statement of the value of piecework. Digging, if ordinary soil, is worth 70s. to 80s., and for turf or leys 12s. to 130s. per acre. So much depends on the rate of wages, that we cannot advise you better than to ask some market gardener or farmer in your locality for information.

EWING'S COMPOSITION FOR VINE MILDEW (Several Correspondents).—We are obliged by your information, that you find it effectual.

DO SEEDS LIVE? (J. M.).—Strictly speaking they do not, but, like eggs, they give birth to living organisations.

MANURING ROSES (J. X. P.).—As you object to carrying stable manure through your house, use guano. There is no chemical preparation that will supersede the need of organic remains for them.

AURICULAS (W. B.).—We cannot name dealers. Consult our advertisement columns and prize lists.

PEARS INSECT-EATEN (C. R.).—The wounds on the young fruit are caused by a weevil, *Curculio Pyri*. They feed at night. The only remedy is to spread a white cloth beneath the tree and shake it, or brush it, if against a wall, after dark and destroy the beetle-like insects which fall on the cloth. Take a lantern. The same treatment repeated on two or three nights will subdue the marauders.

GOOSEBERRY CATERPILLARS (R. F. B.).—They do not come out of the ground, but they retire into it each to become a chrysalis, and then they change to flies, which come out of the ground, deposit eggs on the bushes, and from the eggs come the caterpillars. Hand-picking and dusting with white hellebore powder will subdue the caterpillars. To prevent their going into the ground cover the surface 2 inches deep with spent tanners' bark.

CONVERTING TOOL-HOUSE INTO A HOTHOUSE (H. L. E.).—A western aspect

is not a good one for a Cucumber house, it will nevertheless answer. We should simply have a glass roof fixed, and with three lights at the upper part to open for ventilation, which need not be more than 3 feet wide and 2 feet long, and raised in a similar manner to skylights. You will need but little froot ventilation, but you may have two ventilators in the front wall that need not exceed 2 feet by 1 foot. Front lights for such a house are not necessary, a glass roof will be sufficient. A fine all round the house will give you sufficient heat, having the bed for the plants over the fine in front, and troughs on the fine to hold water. These may be formed of cement. "Thompson's Gardener's Assistant" will suit you.

**DAHLIA STEMS PEGGING (E. C.).**—The bed, we presume, has been thoroughly dug and manured, exposed during the winter to the weather, and well raised in the centre. In planting, the Dahlias should be planted inclining to the soil, so that when they have grown a little they can be pegged down. Without this precaution at planting they are apt to break-off at the ground when pegged down; this should be done three weeks or a month after planting. The growths, as they advance, will require regulating, and pegging should be proceeded with until the ground is covered. The show and fancy kinds are not suitable; the dwarf bedding varieties are best. They should be planted at the same distance apart as each kind attains in height, having the tallest in the centre and the dwarfest at the sides. A dozen good dwarf bedding sorts are:—*Dwarf Queen*, purple, tipped white, 3 feet; *Leah*, yellow, 3 feet; *Bob Ridley*, red, 2½ feet; *Alba Multiflora*, white, 2½ feet; *Little Wonder*, scarlet, 2½ feet; *The Pet*, dark maroon, white tip, 2 feet; *Cloth of Gold*, bright yellow, 2½ feet; *Faust*, shaded dark maroon, 2 feet; *Mont Blanc*, white, 2 feet; *Dark Model*, deep crimson, 2 feet; *Orange Boven*, orange, 2 feet; and *Rising Sun*, intense scarlet, 1½ foot.

**REMOVING RUNNERS OF STRAWBERRIES IN POTS (G. N.).**—The runners should be removed as they appear. They impair the vigour of the plants, and the size and quality of the fruit.

**WOODLICE DESTROYING (A Cork Subscriber).**—The best way to destroy woodlice is to place a little hay all round close to the wall or side of the frame, leaving the bed uncovered, and on the removal of the hay in the morning they will be congregated in the angle formed by the wall and side of the bed; on them pour boiling water. The hay so removed should be plunged in boiling water. This repeated a few times will thin their numbers more than anything we know.

**BURNING SULPHUR IN VINERY (S. N. M.).**—Of course it would destroy the leaves and berries, for by burning sulphur you formed sulphurous acid. Dusting the leaves of the Vines with flowers of sulphur is the best treatment for removing mildew. Keep the air of the house cool, and the roots warm and watered with tepid water to promote the production of fresh foliage, and save the few Grapes remaining.

**MELONS WITH CUCUMBERS (A Lady in Cheshire).**—It is quite true they may be grown together; but if they are, neither can be so fine or well flavoured as if grown in separate frames.

**OILED CANVAS (B.).**—Old pale linseed oil three quarts, acetate of lead 2 ozs., and white resin 8 ozs. The acetate of lead to be ground with a little of the oil; then add the rest of the oil and the resin, and incorporate thoroughly in an iron pot over a gentle fire, and with a large brush apply hot to the calico stretched loosely previously by tacks upon a frame. In twenty-four hours it is fit for use, and may be tacked on the frame tightly to remain. If only a small piece of calico is to be oiled, take a proportion of the several ingredients sufficient for your requirements.

**PROPAGATING POINSETTIAS (Idem).**—The soft young growths will not strike well now, but they do admirably in July or the early part of August, the points being taken off with two joints and the growing point (cutting immediately under the lowest joint), and inserted singly in 3-inch pots in sandy loam, leaf soil, and sand, in equal proportions. Place the cuttings in a gentle bottom heat of 75°, keep close, and shaded from sun. When well rooted, admit light and air gradually, and remove to a position near the glass in a light, airy, cool stove or warm greenhouse, shifting into 5 or 6-inch pots; or if the plants are wanted in small pots 4½ inch pots will suffice. They should have the shift into larger pots when they are moved from the propagating frame. You may also put in the eyes or cuttings with two joints, but do not remove the leaves except for cuttings with two joints, which may have the lowest leaf removed. Insert the eyes with the leaf. These, if placed in gentle bottom heat, kept moist, not wet, and shaded, will soon root and make fresh shoots; and shifted into larger pots and grown on they will flower during the coming winter. Those from the points of the shoots will flower the earliest.

**SULPHATE OF IRON (Idem).**—At the rate you name, 1lb. to 100 gallons of liquid manure, it would be quite safe to apply to Roses, but what benefit it will confer on your neighbours we are at a loss to know, though it may act beneficially on the plants. Without injury to your neighbours you may apply the liquid manure, there being no better deodoriser than soil. For the *Zonal* and *Tricolor Pelargoniums* there is no better liquid manure than one peck each sheep droppings and soot to thirty gallons of rain water, applying twice a week. Guano is also good if applied at every alternate watering at the rate of 1 oz. to the gallon. The liquid in each case should be thoroughly mixed, well stirring up each time. It will be suitable for *Verbenas* in pots.

**CLINTONIA PULCHELLA FAILING (A Constant Reader).**—The seed only requires to be sown in a pot or pan well drained, and filled to within half an inch of the rim with soil, placing over the drainage an inch of the rough of the compost, and then fine soil sifted. The surface should be made fine and even, and the seeds scattered evenly, and covered very lightly with fine soil, just enough to say there is some. Place the pots in a hotbed, and water lightly as required, to keep them moist but not wet, and when the plants appear keep them near the glass and well aired, watering carefully. When large enough to handle prick them out carefully in pots or pans about an inch apart, and shade for a few days, watering very moderately, and when well established harden well off, and plant out or remove to a light airy position in the greenhouse for flowering. The watering should only be when the soil is dry, and then give a thorough supply. Sandy loam with a third of leaf soil will grow the plant well. We are unable to account for your failure, therefore give you the treatment by which we succeeded.

**SANDERSONIA ACURANTICA CULTURE (E. L. C.).**—Pot them, just covering the bulbs with soil, which may consist of two parts fibrous yellow loam, one part each sandy peat and leaf soil, with a sixth of silver sand, the whole well mixed, and chopped-up fine but not sifted; provide good drainage. In potting only let the soil be about an inch below the rim of the pot, and when the plants have grown a few inches above the rim, top-dress with the same kind of soil as was used in potting. Place in a gentle bottom heat of 75° to 80°, and water only to keep the soil moist, giving what may be necessary just

within the rim; and when they have made roots and are growing freely gradually withdraw from the hotbed, and remove to a light airy position in the greenhouse, watering freely during growth, and when this ceases keep rather dry, and in the greenhouse during the winter. Pots twice the diameter of the bulbs are sufficient. If small you may place three or more in a pot, allowing for an inch of soil between the bulbs and the pot.

**POT STRAWBERRIES FAILING (Failure).**—The cause of your non-success rests, we think, with the plants, last season not being favourable for the ripening of the growth and full maturity of the crowns. The treatment seems to have been correct, except that the saucers if used at too early a stage may have caused the roots to decay, and now that the berries are ripening they damp-off, which must be caused by too close and moist an atmosphere. Give more air, and keep drier.

**CUCUMBERS GANGRENE (Constant Reader).**—The peel sent us shows that the Cucumbers have an exudation of sap—a gangrene or ulceration on the surface, resulting from an excess of sap induced by the too rich food which the foliage and fruit cannot elaborate; and it is parted with on the surface of the fruit, also the young shoots and stems of the plants. It is common to luxuriant plants in a dull and cold period, but disappears in warmer and brighter weather. Keep rather drier, and give a little extra warmth, not taking away many leaves, but rather encouraging growth. The fruit is wholesome.

**APPLYING LIQUID MANURE (A. P.).**—The Onions may well not come up. You have rotted the seed in the ground with the liquid manure, which ought not to be applied to anything until it has good root-hold and is well above ground; then pour it between the rows of plants, and not over them, giving a good soaking every week or fortnight as the weather happens to be dry or otherwise. The surface should be loosened to admit of the liquid freely entering the soil, doing it in the intervals between the applications. It may be given liberally to anything in free growth, but during growth only, and should not be very strong. It is better weak than strong, diluting it if necessary with water.

**DESTROYING SLUGS AND WORMS (Idem).**—Dust the plants and ground late in the evening in moist weather or after showers with quicklime, but not during rain, and it will kill all those it touches. Repeating the dusting after each rain, or late in the evening and early in the morning a few times, will rid you of them.

**MUSHROOMS EATEN (W. N.).**—We do not think the holes are made by the small flies to which you allude. If you were to examine at night with a lantern we think you would find woodlice or snails. The latter coming in the egg state with the soil are the cause of the mischief. They may be taken and destroyed; one or two do great harm. Woodlice are more difficult to deal with. The best plan is to place some hay next the wall with some roasted Potato under, and over this in the morning pour boiling water close in the angle formed by the wall and bed. It will kill all it touches, also the Mushrooms, but it need not extend over the bed more than an inch or two from the wall. Repeated a few times it will free you of injury from them for some time.

**DESSERT PLUMS FOR EAST ASPECT (W. W. B.).**—Your situation being cold and exposed, the following will answer:—*Golden Gage*, *Belgian Purple*, *July Green Gage*, *Jefferson*, *Kirk's*, and *Prince of Wales*.

**FIELD MICE ON LAWN (W. F. S.).**—Procure some of the smallest size of steel spring traps, and set them by the holes and in the runs of the mice, taking out soil or turf so as to admit the traps level with the surface, and cover them lightly with fine soil so as to hide the traps, no more soil being used than will do this, and setting them as delicately as possible. Baits are not of much use, but you may scatter a few Peas, and if the mice take these you may steep some Peas in water for a few hours, push through them fine brass wire, about three for a trap, and secure them to the upper side of the trap table, setting the trap as before, covered with soil, the Peas appearing above the surface. Wheat strung in the same way forms a good bait, but you may take mice without baiting. The traps may be had of most ironmongers; the only objection to them is their catching anything that forces down the table of the trap, and the hold is so sure that no cat, dog, or pheasant can escape. The traps have cleared us of mice in places where cats could not go. For destroying mice cats have no equal. Ours in about an hour caught a dozen.

**NAMES OF PLANTS (Roxburgh).**—It is *Pyrus americana* or *American Service*. It may be grafted on the Mountain Ash or on a Pear stock. (R. R.).—*Prunus Padus*, the Bird Cherry. (S. S.).—It is *Ceanothus azureus*, Blue-flowered Ceanothus. It may be grown as a bush.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### HYBRID BIRDS.

Will you kindly permit me to correct an erroneous quotation that appears in last week's Journal, as reproduced from the "American Fanciers' Journal," by James S. Bailey, M.D., in reference to the production of hybrids, as it might lead to great misapprehension? The doctor says Mr. Hewitt describes the cross of "the Golden Pheasant cock" with five varieties of fowls. Now the fact is this, I never knew an instance among the many attempts made in which "the Golden Pheasant cock" bred with any description of our domestic poultry, as all such efforts have signally failed, for in no case has even a single egg proved to be fertilised.

I have seen the cross between the Golden and Silver Pheasants, a most lovely hybrid, which, strangely enough, possesses a very considerable portion of the plumage of a *distinctly bright mauve hue*, though not a single feather of that colour can be found in either parent.

The hybrid between the "Golden Pheasant cock" and the English hen Pheasant is invariably a bright deep chestnut throughout, but still well crested and tipped as in the male parent. Both the Golden and Silver Pheasant have been so repeatedly tested with the view to produce hybrids with the common domestic fowl (and that, too, under the most favourable circumstances without success), that I deem it impossible to ob-

tain such a cross. By referring to my original article in "The Poultry Book" it will be seen my remarks on the breeding of hybrids distinctly state the male parent to be the "common wild Pheasant" of our coverts, a bird most widely different from the "Golden Pheasant cock," for which reason it may prevent much useless trouble to fanciers if you permit this correction to be inserted.—EDWARD HEWITT.

### ACCRINGTON POULTRY SHOW.

THIS was held on the 21st. The entries in every section were excellent; those in the department on which we write proving a thorough appreciation of the regulations of the Society. The pens were placed against the walls, backs to the wind, and stretched a considerable distance round the field, the only mistake being that the fronts had no doors, but were ordinary wire netting, and the birds were difficult to handle in consequence. Of single *Game* cocks the first three were Brown Reds of such quality as is rarely found together; and although the cup-winner was fairly first, yet there was little to choose in the next two, condition alone deciding. In hens Brown Reds were first and third, and Black Red second; the whole class being good, and the first without doubt the best in the fancy. Local cocks were not a good lot. In cock and hen Mr. Brierley won with grand birds, both pairs being Brown Reds, and we may here remark upon the almost entire absence of good Black-breasted Reds, not alone here, but at all shows. It is high time the breeders of this variety should bestir themselves, or this most beautiful of all Game fowls will be lost to the fancy. In Any other colour a good even pen of Duckwings was first, with Piles of high quality second, the latter, however, being out of feather; the third were smart Duckwings. The first-prize *Dorkings* were very large and good in all points, and of the Dark variety; the second being Silvers of good quality; the third were Dark. In Buff and Cinnamon *Cochins* the first were a good even pen, the second also a fair pen, but the third had diseased feet; and it is with regret that we are called upon to record the fact of one pen of otherwise magnificent birds were disqualified on account of the hens' plumage being artificially stained, and so completely was this done that at first sight the whole of the Judges fastened upon the pen as first-prize winners. [If our reporter had stated the owner's name we would have published it.] A nice pair of Partridge won first in the next class, Whites being second, but the cock's plumage was rather yellow. The third were also Partridge. *Spanish* did not come up to our expectations, some of the best birds being out of bloom. The first was a good old pen; second younger birds, fine in the quality, as also the third; the second cock being a little pink over the eyes, but the combs were better in both cases than the first. *Brahmas* good; Messrs. Crabtree to the front, closely pressed by a capital pair from Sheffield. *Hamburgs* not numerous but good. In Golden-pencils was the most perfect cock we have seen of late, but hen not so good as that in the second-prize pen, the second cock also being of high quality. As regards quality the above remark will apply also to the Silver-pencils, but the first-prize pen was considered superior to the Golden, and awarded the Hamburg cup; the second-prize pen contained a hen that ought to be mated with the first-prize cock. Silver-spangles a very good lot, the hens, especially, being good, large, and faultlessly spangled. Of Golden-spangles a slashing pair were first, the hen being perfect; second was a most exquisitely-marked cock, but the hen not so good; and third a grand-looking pair. In Blacks the first three were very good, the first standing a very clear first. In *French fowls* Messrs. Walton won with their faultless La Flèche, the second and third being Crève-Cœurs, some good Houdans having very bad feet. *Polands* were, first Silver and second Gold, adult, and of splendid quality, while the third were Golden of last season, most superb in marking. In the Variety class were, first White Malays, second Cuckoo *Cochins*, and third Red Malays. In single *Game Bantam* cocks were some birds of good quality, the cup-winner being a really good all-round bird, except that he is a little wanting in colour on the wing; second one of the most perfect Game-shaped birds, sound, plump, and firm, but sadly short of colour; and third a stylish bird, but rather long-bodied and flat-winged, and also wanting in colour; some splendid-coloured birds being only highly commended from want of condition. In hens, any colour, were first Black Reds, most perfect in colour, small, and gamey in appearance; second capital-coloured Brown Reds, and third also Brown Reds. Pen 525, very highly commended, were far too large, and 531 had one trimmed round the eyes.

The Local single cocks were of fair quality. In Black-Red *Game Bantams* the first were very good, the hen being one of the best ever seen; second and third being also good even pens. In the next class the first and second were Duckwings, the first very small and stylish, the second losing only in size, while the third-prize pen contained one of the smallest and most stylish *Game Bantam* cocks in the Show (a Pile), but the hen was too large for him. In the Variety class good Blacks won first and third, and Pekins second. It strikes us as scarcely fair to offer

so many prizes for *Game Bantams* and throw the whole of the other varieties into one class, a policy which, if the entries be any guide, is duly appreciated upon its merit by the exhibitors. *Turkeys* were a good lot, as also were the *Geese*, but the pens might have been larger with advantage. In *Aylesbury Ducks* Mr. Walker won with a large pen of good quality, the second-prize Duck being down behind, but the pen otherwise good. Rouens large, good, and well shown, the winners in the Variety class being Chilian, Pintail, White-faced, and Brazilian Whistlers. The greatest surprise to us was the condition and feather in which the birds were shown, which were such as we have never before seen at this time of year.

### PIGEONS.

The entries were good in most of the classes. *Carrier* cocks were good in most cases, but some showed overwork and want of rest. A nice Black was placed first, Dun second, and Black third; and in hens the first was a grand bird in all points, the second a Dun of good quality but a little out of sorts, while the third was a very heavy Black. In *Tumblers* first and third were Almonds, and second Kites. In *Barbs* the first-prize Blacks only just dropped in in time for the awards. The whole of the winners were well-developed birds. *Owls* were very poor, being neither foreign nor English, but a kind of cross. In *Pouters* a grand showy pair of Blues stood first, with Reds second, the cock being good but the hen scarcely a good match in quality. *Fantails*, a fair lot, with *Turbits* not of high merit. The *Dragon* class was large, as usual, and Mr. Esquilant gave great satisfaction to the winners, but it is a question if he succeeded in the same degree with those who owned the birds with unnatural-coloured beaks, which he so justly left out in the cold. Of *Trumpeters* were but three pairs, but these grand in all points. In *Jacobins* the first and second were Reds, the third Black, and the class very good. *Nuns* were good, the Rev. A. G. Brooke to the front with good Blacks, a nice Red being third. In *Antwerps* the first were a capital pair of Short-faces, and second Blue-Chequers of the Long-faced variety. In *Maggies* Mr. Horner secured first and second honours with a Red and Yellow of good colour and marking; and in the Variety class the prizes were awarded to a Red Swallow, Ice, and Fairy Swallow respectively.

*Rabbits* were exceedingly well placed in all classes, Messrs. Banks & Irvine's Tortoiseshell does, so often in competition, falling into their old places, as also the Angoras in the following class, which were pretty good. Many of the Himalayan were not good on the extremities, but the first-prize was a good Rabbit, and the three Silver-Greys were well placed, the first two being very even in colour and well silvered. In the Selling class were first a Lop, and second a Silver-Grey.

(From a Correspondent.)

*Hamburgs*.—Gold-pencilled cock and hen (three entries).—First came a very showy cock with a perfect tail, mated with a fair pullet rather mossy on her back. Second a good cock, with the best pullet in the class. Third a good-bodied old cock, bronzed-tailed, with a middling pullet. Silver-pencilled cock and hen (five entries).—The first-and-cup pen contained a splendid cock, the best of the season; the pullet was a great drawback. Second a good cock, but not so good in ears and tail as that which took the first prize, but mated with the best hen in the class. As a pen this was nearly equal to the first. Third cock, too grey in tail and inclined to yellow; the pullet was too grey in markings. The h.c. pen was of average merit. Gold-spangled (six entries).—First, the Haslingden cock was again to the front, mated with a hen of splendid ground colour and large spangles. Second, a well-marked cock of good colour, and a nice pullet bright in colour. Third, a cock rather dark in bottom of neck, but good in colour; the hen nicely marked in body, but wanting in stripings in the neck. Pen 452, h.c., contained a well-coloured cock, dark in hackle and breast, with coarse comb; the pullet being also too heavy. Pen 455, h.c., contained a fair hen, though not so good as she appeared to be at Haslingden, where she won first, the canvas over the pen at Haslingden making her appear much brighter than when shown in the full light. The cock was very yellow in the neck. Silver-spangled (five entries).—In the first-prize pen was a good cock in all respects, with a nice hen. Second, the cock was rather dark in the thighs, with a better hen than the first. Third, cock too light on the back; the hen short of marking in the neck. Pen 460, h.c., would no doubt have been on the prize list but for the cock's comb being lately carved; it was a very nice pen. Pen 457, unnoticed, of Ashton & Booth, would have run any of the pens closely, but the cock's face was so very white. Black *Hamburgs* (six entries).—First a grand cock, well grown and in good condition, with a nice hen. Second, a good pen. Third, too little altogether in bone, with a moderate hen. Pen 464, c., of N. Marlor, contained the best hen in the class.

*GAME*.—Cock.—1, S. Matthew, Stowmarket. 2, J. Fortune, Keighley. 3, D. Harley, Farnburgh. h.c., J. Fletcher, Stoneclough; W. Barker, Walsden (2); J. Mason, Lancaster; C. W. Brierley, Middleton; J. F. Walton, Rawtenstall. Hen.—1 and 2, C. W. Brierley. 3, J. F. Walton. h.c., T. P. Lyon, Liverpool.

**GAME.—Cock.**—Within 3 miles of Accrington.—1, J. Woods, Accrington. 2, J. Greenhalgh, Huncoat. 3, J. Barnes, Accrington. 4, J. W. Brierley. 5, Rauthmell and Barrow, Milnthorpe. *Any other variety.*—1, J. W. Thornton, Bradford. 2, J. F. Walton, Rawtenstall. 3, W. Ormerod, Walsden. 4, C. W. Brierley (2).  
**DORRINGS.**—1, J. Walker, Rochdale. 2, Mrs. H. Barclay, Tamworth. 3, J. White, Warley. 4, Mrs. Somerville.  
**COCHINS.**—*Buff or Cinnamon.*—1 and 3, W. A. Taylor, Manchester. 2, C. Sidgwick, Keighley. 4, W. H. Crabtree, Levenshulme. *Partridge and White.*—1, T. Aspin, Church. 2, W. A. Taylor. 3, T. Stretch, Ormskirk. 4, W. A. Taylor. 5, Whitworth, jun., Longsight.  
**SPANISH.—Black.**—1, J. Leatring, Broughton, Preston. 2, H. Wilkison, Skipton. 3, H. Beldon, Bingley. 4, C. R. Kay, Milnthorpe; J. Leeming, C. C. R. Kay.  
**BRAMMAS.**—1 and 2, W. H. Crabtree. 3, W. Whiteley, Sheffield. 4, W. H. Crabtree. 5, T. Pomfret, Higher Walton.  
**HAMBURGS.—Golden-pencilled.**—1 and 3, H. Beldon. 2, G. & J. Duckworth, Church. *Silver-pencilled.*—1, Cup, and 4, H. Beldon. 2, J. Rhodes, Accrington. 3, J. Robinson, Garstang.  
**HAMBURGERS.—Golden-spangled.**—1 and 2, G. & J. Duckworth, Church. 3, H. Beldon. 4, T. Boulton, Hanford; N. Marlor, Denton. 5, J. Buckley, Taunton. *Silver-spangled.*—1 and 2, J. Fielding, Newchurch. 3, H. Beldon. 4, J. Robinson. 5, Black. 1, H. Beldon. 2, W. Wilson, Waterfoot. 3, J. Moore, Wilden. 4, Bingley. 5, H. Maskery, Leek; N. Marlor.  
**FRENCH.—Any variety.**—1, E. Walton, Rawtenstall. 2, J. Robinson, Garstang. 3, W. H. Crabtree. 4, G. W. Hibbert, Hyde; W. Whitworth, jun. 5, H. Feast, Swades.  
**POLANDS.**—1 and 2, H. Beldon. 3, T. Dean, Keighley. 4, W. A. Taylor. 5, W. Barvey.  
**ANY OTHER VARIETY.**—1, J. F. Walton. 2, J. Walker, Rochdale. 3, Rev. A. G. Brooke, Shrewsbury.  
**SELLING CLASS.**—1, J. Leeming. 2, T. P. Lyon. 3, Miss S. Hornby, Garstang. 4, G. Anderton, Accrington.  
**GAME BANTAMS.—Cock.**—1, G. Anderton. 2, G. Hall, Kendal. 3, W. F. Addie, Preston. 4, G. Hall; Mrs. E. Newbit, Epworth; W. F. Entwistle, Westfield; W. F. Addie, Preston; E. Walton, Rawtenstall. *Hen.*—1 and 3, W. F. Entwistle. 2, J. R. Fletcher. 4, T. Sharples, Crawshaw Booth.  
**GAME BANTAMS.—Cock.**—Within 3 miles of Accrington.—1, G. Anderton. 2, J. Woods, Accrington. 3, E. Cunliffe, Clayton-le-Moors.  
**GAME BANTAMS.—Black Reds.**—1, W. F. Entwistle. 2, E. Walton. 3 and 4, G. Hall. *Any other colour.*—1, J. R. Fletcher. 2, W. F. Entwistle. 3, G. Hall. 4, W. Baskerville, Manchester; T. Parker, Burnley; E. Walton.  
**BANTAMS.—Any variety except Game.**—1 and 3, R. H. Ashton, Mottram. 2, H. B. Smith, Broughton. 4, J. Walker; J. Watts.  
**TURKEYS.**—1 and 3, J. Walker. 2, Rev. N. J. Ridley, Newbury.  
**GEES.**—1 and 3, J. Walker. 2, G. Rawson, Halifax.  
**DUCKS.—Aylesbury.**—1, J. Walker. 2, J. Hedges, Aylesbury. 3, Mrs. Wootton, Mapperley. *Boucon.*—1 and 2, T. Wakefield, Newton-le-Willowa. 3, J. Walker. 4, P. West, Wigton. *Any other variety.*—1 and 2, H. B. Smith. 3, J. Walker. 4, H. B. Smith (2); Mrs. Wootton; J. Pickup, Haslingden.  
**ANY VARIETY EXCEPT GAME AND GAME BANTAMS.**—Within 3 miles of Accrington.—1, J. Rhodes. 2 and 3, T. Aspin.

## PIGEONS.

**CARRIERS.—Cock.**—1, W. Sefton, Blackburn. 2, E. Horner, Leeds. 3, H. Yardley, Birmingham. *Hen.*—1 and 3, E. Horner. 2, W. Sefton.  
**TUMBLERS.**—1, E. Horner. 2, T. & W. Oddie, Brierfield. 3, H. Yardley.  
**EARLS.**—1, P. R. Spencer, Hereford. 2, J. Stanley. 3, E. Horner.  
**OWLS.**—1, T. & N. Oddie. 2, E. Horner. 3, J. Fielding.  
**POUTERS OR CROPPERS.**—1, W. Harvey, Sheffield. 2 and 3, E. Horner.  
**FANTAILS.**—1, J. B. Bowdon, Pleasington. 2, J. F. Loversidge, Newark. 3, H. Yardley.  
**TURBITS.**—1, G. Cutler, Sheffield. 2, J. B. Bowdon. 3, E. Horner.  
**DRAGONS.**—1, H. Yardley. 2, J. Stanley. 3, W. Sefton.  
**TRUMPETERS.**—1, W. Harvey. 2, E. Horner. 3, J. Gardner, Preston.  
**JACOBIANS.**—1, J. Thompson, Bingley. 2, W. Dugdale, jun., Burnley. 3, E. Horner.  
**NUNS.**—1 and 2, Rev. A. G. Brooke. 3, E. Horner.  
**ANTWERPS.**—1, C. F. Copeman, Birmingham. 2, J. Gardner. 3, H. Yardley.  
**MAGPIES.**—1 and 2, E. Horner. 3, J. Richmond, Magnalla.  
**ANY OTHER VARIETY.**—1, E. Horner. 2, A. & T. Wells, Ripon. 3, J. Thompson.

## RABBITS.

**SPANISH.**—1, F. Banks, London. 2, J. Irving, Blackburn. 4, J. Irving; F. R. Edwardson, Liverpool.  
**ANGORA.**—1, H. Sweetman, Fulford, York. 2, S. Brierley, Ending, Rochdale. 4, J. Baron, jun., Rochdale.  
**HIMALAYAN.**—1, W. Whitworth, Longsight. 2, T. & R. Mills, Accrington. 4, W. H. Tomlinson, Newark; R. Boyle, Blackburn.  
**SILVER-GRAY.**—1, R. Boyle, Blackburn. 2 and 4, J. Hallas, Huddersfield.  
**ANY VARIETY.**—1, T. & R. Mills. 2, J. W. Harding, Burnley. 4, J. Armstrong, Leeds; S. Buckley, Ending, Healey. 5, J. Hallas.  
**JUDGES.—Poultry.** Mr. John Martin, Church Cottage, Clainea, Worcester; Mr. Simeon Fielding, Trentham, Stoke-on-Trent; Mr. E. Hutton, The Aviaria, Pudsey. *Pigeons and Rabbits:* Mr. F. Esquilant, 4, Effra Road, Brixton, London.

## ANTWERP CARRIERS.

Much has been written and said about Antwerps, but I believe there are a great many fanciers who, like myself, scarcely know anything about their colour, &c., for the show pen, and my chief object in writing this is to try and gain that information through the columns of this Journal.

First, then, I wish to know which kinds are usually shown in what is termed the Antwerp class (by this title I mean a class in which the flying powers of the birds are not tested). I believe there are what is called Long-faced, Medium-faced, and Short-faced Antwerps. Will some reader kindly tell me to what colours of Antwerps these expressions apply, and the standard length of the face that constitutes a perfect bird in each?

Secondly, I wish to know the points of a Blue-chequered and a Red-chequered Antwerp Carrier that are essential for the show pen.

In the next place let me turn my subject to Homing or Working Antwerps. I have nothing to ask about colour or any other point in these birds, as, from what I can find out, colour is not regarded in the least; as long as they can fly a long distance in a short time, that is all that is required. I want to know which are considered the best kinds for flying long distances. I have heard there is a breed of Pigeon called a "Badge;" it is a first-rate bird to fly, even better than the Dragon. Is this the case?

I should like to establish a Pigeon-flying club in this neighbourhood, but I do not know where to obtain any good rules for such a society. If such experienced gentlemen as Messrs. Webster and Sparrow would take this subject in hand, and give us a little information respecting show and Homing Antwerps, and establishing flying clubs, I am sure they would confer a great favour on many amateur fanciers as well as myself.—F. S. H., Cornwall.

## AN AMERICAN PIGEONRY.

LYING close by me in the "our Journal" shelf of my secretary with Mr. Woodhouse's photograph of his Pigeon nest pana and feeding vessels are some photographs sent me by Mr. T. S. Gaddess, of Balto. (query Baltimore?), United States, America.

We are accustomed in England to speak of our American cousins; but I, as an English fancier, beg to claim that we of the fancy are nearer akin than cousins, for are we not brother fanciers? I ask, therefore, that engravings of our American brother fancier's pigeonry may find places in our English Journal.

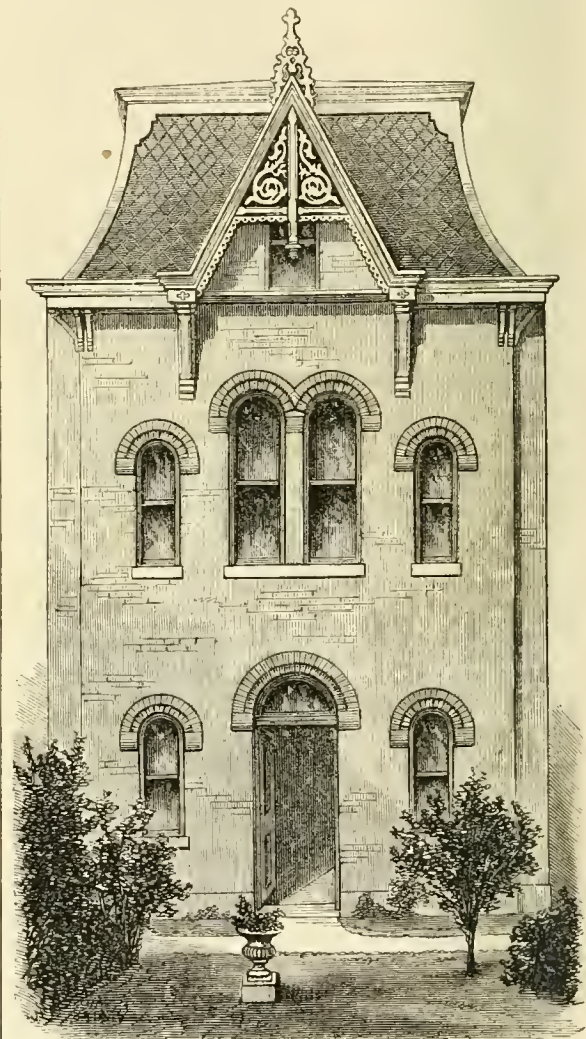


Fig. 1.

Photograph No. 1 (fig. 1), presents us with an external view of Mr. Gaddess's handsome and spacious Pigeon home. It has first, second, and third floors, and might, indeed, be the abode of wingless Doves, so elegant is the structure, with a flower garden in front. What a different Pigeon-loft to the old dovecote of England, and the even less attractive "doecote" of Scotland! Then there is No. 2 (fig. 2), representing the second-floor front, showing the west half, its dimensions being 18 feet by 18 feet, and containing eighty nest boxes. There is, Mr. Gaddess states, a room on the same floor at the back, 8 feet by 12, exclusively for Short-faced Tumblers. Both rooms, the climate needing it, are

heated by fireplace stove from the first floor. Not many fanciers in England afford such space to their pets. The fountain in the centre gives an air of elegance to the room. What a charming place to retire to on a cold or rainy day, or when the domestic chimney smokes, or the wife (the proverbial one) scolds! What a place to watch and note Pigeon ways and Pigeon beauty! In England I have many a time seen magnificent birds ill-housed, which, when the fancier can afford to do differently, is not well. I own I wish the broad Atlantic did not exist, and I could sit down in this pigeonry with the owner and enjoy with him his Pigeons. Truly some of those birds on the top of the pens seem, even in a dim photograph, worth examining. Then there

The French sub-varieties are:—

The Caux.  
The Cammont.  
The Mans.  
The Barbezieux.

The Bresse.  
The Resme.  
The Angers.  
The Arganta.

These are only variations of the principal French varieties. Some, as the Barbezieux and the Bresse, are lost.

#### EXOTIC VARIETIES.

*Cochin-China* or *Shanghai*, of which there are sub-varieties, Buff, Lemon, Partridge, Black, White, Cuckoo, and Silky.

It is known that silky plumage is generally produced by the

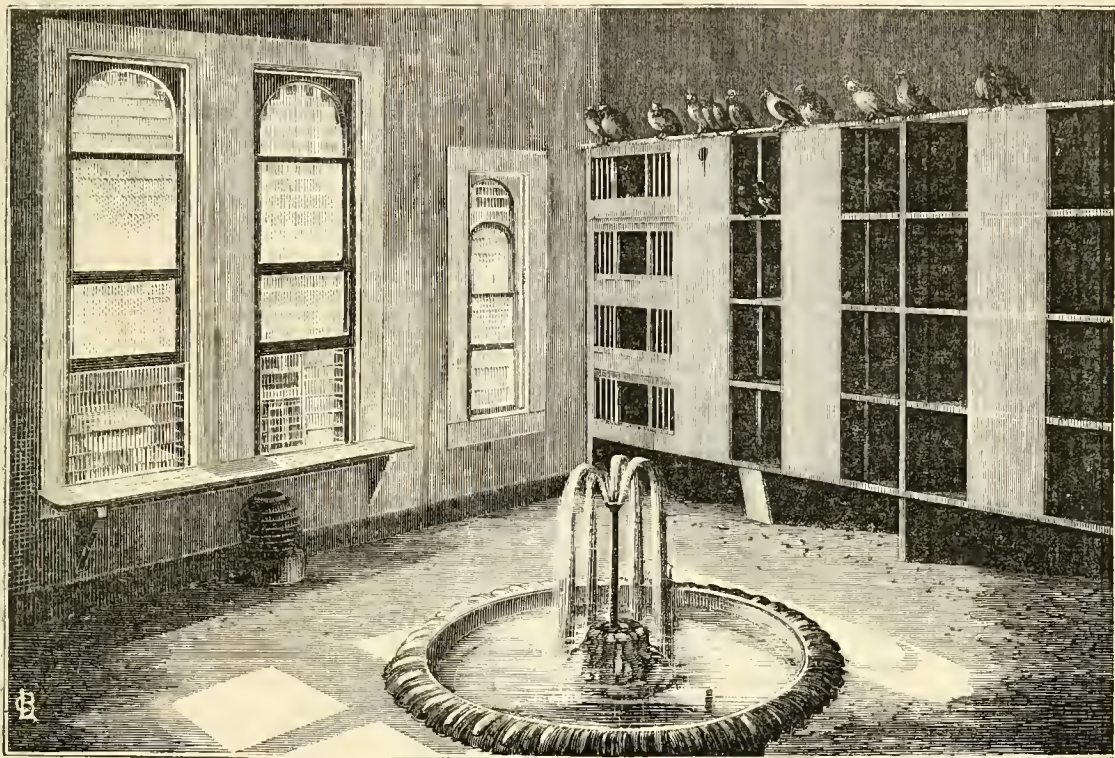


Fig. 2.

is a roof-room, the dimensions of which are 15 feet by 17 feet, and lighted and ventilated on either side.

On examining the three photographs, two of which are engraved, I must congratulate Mr. Gaddess on the splendid home he is able to provide for his pets. Mr. Gaddess is a dweller in a town; and how suited for a town man is the Pigeon fancy! No garden needed, no large yard as for poultry—simply a building, and all is prepared if that the building be suitable. I wish Mr. Gaddess much pleasure and success with his Pigeons.—WILTSHIRE RECTOR.

### THE POULTRY-KEEPER.—No. 4.

#### CLASSIFICATION AND NOMENCLATURE OF THE VARIETIES.

**CLASSIFICATION.**—As it is not possible to class fowls by following the probabilities of their origin, we have made a classification formed upon the size, or the usefulness, or the peculiarity of the plumage of each variety.

We have divided the known varieties into four great categories.

- I.—The great European varieties.
- II.—The great exotic varieties.
- III.—The new varieties called fancy.
- IV.—The dwarf varieties.

We have only mentioned the well-known varieties, putting on one side those which are lost and those which are doubtful.

#### EUROPEAN VARIETIES.

Houdan .....	} France.
Crève-Cœur .....	
La Flèche .....	
Dorking .....	England.
Spanish .....	Spain.
Bréda (fowl with a Rook's beak) .....	Holland.
Brugé .....	Belgium.

same causes as albinism, and is to be met with in all varieties after a certain time of moulting and certain conditions.

#### BRAHMA POOTRA.

*Sub-varieties.*—White and Partridge.

#### MALAY.

Of many shades.

#### NEW AND FANCY VARIETIES.

*Padua* or *Polish.*—*Sub-varieties.*—Silver-spangled, Gold-spangled, White, Black with black crests, Cuckoo, Chamois, whole, coloured, or speckled. These are the six varieties recognised by closely-judging amateurs. All other variations are obtained by means of these, and are of less interest.

#### THE DUTCH.

*Sub-varieties.*—Blue (spangled) with a blue crest; Black with a white crest; Blue with white crest. The English kinds are Golden and Silver.

#### HAMBURGH.

*Sub-varieties.*—Gold-spangled, Silver-spangled, Black (hen Pheasant-plumaged), Golden-pencilled, and Silver-pencilled.

#### JERUSALEM (RUMPLESS).

Short-legged without tails.

#### THREE CUCKOO VARIETIES.

These, though forming separate varieties, do not positively belong to known varieties, but are of too much interest to be quite omitted. Shaded French Cuckoo, Shaded Rennes Cuckoo, Shaded Dutch Cuckoo.

#### DWARF VARIETIES.

*Bantams.*—*Varieties.*—Gold Sebright, Silver Sebright, Black, White, Game, Black-breasted, and Brown-breasted.

*Java.*—Dwarf Feather-legged English, Negro with silky crest, Silky with white crest.—[M. Jacques does not mention the Scotch Dumpies and the Sultans.]

## BEDLINGTON POULTRY SHOW.

THE tenth Exhibition was held at Bedlington on the 26th and 27th inst. The following is the prize list, and we shall give next week a report on the birds exhibited.

**DOBKINGS**.—1, J. White, Wariyah, Northallerton. 2, C. Widdas, Houghton-le-Wear, Darlington. 3, J. Watta, King's Heath, Birmingham.  
**COCHINS**.—*Buff or Cinnamon*.—Cup, 1, 2, and 3, G. H. Proctor, Durham. *vhs*, J. Stalker, West Sleekburn. *Any other variety*.—1, G. H. Proctor. 2, H. Bingley. 3, J. Shorthose.  
**BRADFA**.—*Red*.—1, W. Swann, Bedlington. 3, H. Beldon. *hc*, J. Watta. *c*, Hon. E. Hamilton, Lensel, Coldstream; J. N. Lawson, Ryhope, Sunderland.

**SPANISH**.—1, H. Beldon. 2, J. Younghouse, North Shields. 3, W. Sanderson, Whalton, Newcastle. *hc*, H. Wilkieson, Earby, Skipton; J. Willoughby, Hexham.

**POLISH**.—Cup, 1, and 2, H. Beldon. 3, R. Parsons.

**BARNDORF FOWLS**.—*Cross-bred*.—1, G. J. G. Robinson, North Frodingham, Driffield. 2, H. Beldon. 3, W. H. Young, Driffield. *c*, F. E. Schofield, Morpeth.  
**GAME**.—*Cock*.—1, Miss M. J. Nelson, Cockshaw, Hexham. 2, J. Merryweather, Dudley Colliery. 3, E. Ackroyd. *Hen*.—1, E. Ackroyd, Eccleshill, Leeds. 2, J. Stark, Bebside.

**GAME**.—*Black-breasted and other Reds*.—Cup and 1, E. Ackroyd. 2, T. Middlemiss, Seaton Delaval. 3, T. Dodd, Seaton Burn Colliery, Dudley. *vhs*, Miss M. J. Nelson. *hc*, C. Widdas; Miss M. J. Nelson; J. Ferry, Cowpen, Morpeth.

**GAME**.—*Duckings and other Greys*.—1, J. W. Thornton, Bradford. 2, E. Ackroyd. 3, J. W. Brockbank, Carnforth. *vhs*, J. Gibson, Stanhope. *hc*, E. Winwood, Worcester; J. Rowell, Durham (Lintz Green).

**GAME**.—*Any other variety*.—1, J. Douglass, Cambois, Blyth. 2 and 3, T. Leighty, New Hartley. *hc* and *c*, W. Drysdale, Longhirst Colliery, Morpeth.  
**HAMBURGERS**.—*Golden-spangled*.—1 and 2, H. Beldon. 3, W. Harle, Ashington Colliery, Morpeth. *T. Marshall*, Morpeth. *Silver-spangled*.—1, Ashton and Booth, Broadbottom, Mottram. 2 and 3, H. Beldon. *hc*, G. Tornhill, Ashington Colliery, Morpeth.

**HAMBURGERS**.—*Golden-pencilled*.—1 and 3, H. Beldon. 2, J. Rhodes, Eyndurum, Accrington. *c*, J. Pattinson, Bebside Colliery, Morpeth; Miss G. B. Elliott, Newcastle. *Silver-pencilled*.—Cup, 1, and 3, H. Beldon. 2, J. Rhodes. *c*, R. Parsons.

**GUINEA FOWLS**.—1 and 3, Miss Wilson, Morpeth. 2, Mrs. Robson, Stannington. *vhs*, W. H. Young, Miffeld.

**ANY OTHER VARIETY EXCEPT BANTAMS**.—1, H. Beldon (Black Hamburg). 2, R. Hawkins, Seaham (Malay). 3, T. P. Carver, Laughton, Boro-bridge. *c*, J. Scott, Benton Station (Rondans).

**BANTAMS**.—*Cock*.—Cup and 1, W. G. Anderson, Accrington. 2, G. Hall, Kendal. 3, W. C. Dawson, Whitby. *vhs*, W. Rogers, Sunderland. *hc*, G. Hall; Miss M. J. Nelson; Wardle & Bruce, South Gosforth, Newcastle; W. Rogers; T. Dowell, Miffeld, Sunderland. *c*, F. Steel, Stump Cross, Halifax; J. H. Cartwright, Willington; H. Shoulet, Deptford, Sunderland. *Hen*.—1, Miss M. J. Nelson. 2 and *hc*, G. Hall, Kendal. 3, J. H. Cartwright. *hc*, G. Bell, Morpeth; W. Gray, Tow Law; D. Hunter, Sunderland. *c*, T. P. Carver.

**GAME BANTAMS**.—*Black-breasted and other Reds*.—1, Miss M. J. Nelson. 2 and 3, F. Steel, Halifax. *vhs*, G. Hall. *hc*, G. Hall; Miss M. J. Nelson; W. Gray; Wardle & Bruce, Newcastle. *Any other variety*.—1, G. Hall. 2, T. Dowell, Miffeld, Sunderland. 3, Miss M. J. Nelson. *vhs*, T. Remson, Seaton Delaval Colliery. *hc*, F. Steel; Miss M. J. Nelson; W. Murray, Hexham.

**BANTAMS**.—*Any other variety except Game*.—1, H. Ashton, Mottram, Manchester. 2, W. Canney, Bishop Auckland. 3, J. Watta.

**DUCKS**.—*Aylesbury*.—1, W. Stonehouse, Whitby. 2, T. P. Carver. 3, W. Canney. *Rouen*.—1, Miss Wilson, Morpeth. 2 and 3, Miss M. J. Nelson. *hc*, W. Canney; R. G. Hoare, Newcastle. *Any other variety*.—1 and 2, J. Johning, jun., Morpeth. 3, J. Swann, Bedlington.

**TURKISH**.—*Cock*.—1, Miss Wilson. 2, W. Canney. 3, Mrs. Robson.

**SELLING CLASSES**.—*Cock or Drake*.—1, E. Ackroyd. 2, G. H. Proctor (Buff Cochins). 3, W. Hetherington, West Sleekburn. *hc*, G. A. Tate, South Shields (Brown Red Game); Miss M. J. Nelson; Mrs. Cross, Brigg (French); H. Beldon; E. Rutherford, Redlington; W. Hall (Buff Cochins); J. Douglass (Black Red Game); Miss Wilson (White Cochins).

**SELLING CLASSES**.—*Hen or Duck*.—1, G. H. Proctor (Cochins). 2, T. Young. 3, T. Stansfield, Miffeld, Sunderland (Aylesbury Duck). *hc*, E. Ackroyd; T. Stansfield (Rouen Duck).

## COTTAGERS' CLASSES.

**GAME**.—*Any variety*.—*Cock*.—1, G. Taylor, Bedlington Colliery. 2, T. Young, Bebside. 3, J. Morton, Choppinga Colliery. *Hen*.—1, E. Rutherford, Bedlington Colliery. 2, T. Young. 3, J. Morton. *hc*, J. Yellowley, Barrington.

**HAMBURGERS**.—*Any variety*.—*Cock*.—1, Miss Stalker, West Sleekburn. 2, D. Cheyne, Cowpen Laoc. 3, J. Laws, West Sleekburn. *Hen*.—1, J. Wilson, Shankhouse, Cramlington. 2, Miss Stalker. 3, D. Cheyne. *hc*, J. Laws.

**ANY VARIETY EXCEPT BANTAMS**.—*Cock*.—1, E. H. Beldon, Bedlington. 2, T. Oliver, North Seaton Colliery, Morpeth. 3, J. Webster, West Sleekburn. *hc*, J. Nesham, West Sleekburn. *Hen*.—1, J. Dodds, Netherton Colliery. 2, J. Webster. 3, J. Nesham.

**BANTAMS**.—*Any variety*.—*Cock*.—1, W. Short, Bedlington. 2, J. Ferry, Cowpen, Blyth. 3, J. Nesham. *vhs*, A. Hay, Bedlington. *hc*, T. Reaveley, Bedlington Station; R. Fawcett, New Delaval, Blyth. *c*, H. Sharp. *Hen*.—1, T. Reaveley. 2, W. Short. 3, H. Sharp.

## PIGEONS.

**CARRIERS**.—*Cock or Hen*.—1, E. Beckwith, Bonnersfield, Monkwearmouth. 2, W. Ridley, Hexham.

**TUMBLEBIRDS**.—*Short-faced*.—*Cock or Hen*.—1 and 2, E. Beckwith. *vhs*, W. Brydone, Langdon, Danoe. *hc*, H. Simpson, Cramlington; H. Yardley, Birmingham. *Any other variety*.—*Cock or Hen*.—1, J. Dye, Hexham. 2, T. W. Clementson, Hexham. *hc*, J. Thompson, Newcastle; J. Dye; W. J. Doukin, Newcastle; J. Watta; R. H. Blacklock, Sunderland; W. Manle, Newcastle; H. Yardley.

**POSTERS**.—*Cock or Hen*.—1, H. Simpson. 2, J. Dye. *hc*, H. Simpson; R. H. Blacklock; W. Ridley. *c*, J. Dye; H. Simpson; R. H. Blacklock.

**DRAGOONS**.—*Cock or Hen*.—1 and *hc*, F. Graham, South Birkenhead. 2, J. Watta.

**NUNS**.—*Cock or Hen*.—1, J. Young, Bishop Auckland. 2, A. A. Vander Meersch, Tooting, London.

**OWLS**.—*Cock or Hen*.—1, A. N. Dodds, North Shields. 2, J. Dye. *hc*, J. Dye; W. Brydone; J. Young.

**TURKISH**.—*Cock or Hen*.—1, H. Simpson. 2, J. Young. *hc*, W. Brydone; J. Watta; J. Young; A. A. Vander Meersch; A. Brown, Durham.

**BARDS**.—*Cock or Hen*.—1, J. Watta. 2, H. Yardley. *hc*, E. Beckwith.

**JACOBS**.—*Cock or Hen*.—1, J. Young. 2, A. A. Vander Meersch. *hc*, W. Brydone; J. Young; A. A. Vander Meersch.

**FAVAILS**.—*Cock or Hen*.—1, H. Simpson. 2, J. F. Loversidge, Newark. *hc*, E. Beckwith; H. Simpson.

**ANY OTHER VARIETY**.—*Cock or Hen*.—1, M. Ord, Durham. 2, H. Yardley.

**SELLING CLASS**.—*Pair*.—1, J. Young. 2, H. Simpson. *hc*, E. Beckwith; M. Ord; J. Murray, Ouseburn, Newcastle; A. A. Vander Meersch.

## CAGE BIRDS.

**BELGIANS**.—*Cock or Hen*.—1, J. Robson, Bedlington Iron Works. 2, W. Scott, Newcastle.

**NORWICH**.—*Cock or Hen*.—1, A. Armstrong, Newcastle. 2, J. Sinclair, Bedlington. 3, J. Robson.

**CHRYSTAL**.—*Yellow*.—*Yellow-marked*.—*Cock or Hen*.—1, J. Baxter, Newcastle. *Buff or Buff-marked*.—*Cock or Hen*.—1, J. Baxter.

**GLASGOW DONS**.—*Cock or Hen*.—1, J. Murray. 2, J. Davison, Newcastle.

**LIZARDS**.—*Cock or Hen*.—1, J. Baxter. 2, T. Harrison, Newcastle. 3, J. Pingle, Newcastle.

**MILANS**.—*Goldfinch*.—*Yellow-marked*.—*Cock or Hen*.—1, J. Robson. 2, R. Hawman, Middlesbrough. *Buff-marked*.—*Cock or Hen*.—1, R. Hawman. 2, J. Baxter. *Any other variety*.—*Cock or Hen*.—1, J. Stevens, Middlesbrough. 1 and 3, J. Baxter.

**COMMON**.—*Cock or Hen*.—1, J. Stevens. 2, J. Baxter. 3, J. Allison, Long Benton.

**GOLDFINCH**.—*Cock or Hen*.—1, W. & C. Burniston, Middlesbrough. 2, J. Scott, Benton Station. 3, J. Robson.

**BROWN LINNET**.—*Cock or Hen*.—1, R. Hawman. 2, J. Stevens. 3, J. Baxter.

**SINGING BIRDS**.—*Any other variety*.—*Cock or Hen*.—1, J. Baxter. 2, W. and C. Burniston. 3, J. Allison.

**ANY OTHER KIND EXCEPT SINGING BIRDS**.—*Cock or Hen*.—1, E. McKeezie, Waterloo, Blyth. 2, J. Baxter. 3, T. Maughan, Bebside.

**SELLING CLASS**.—*Cock or Hen*.—1, J. Baxter, Newcastle. 2, T. Curley, West Sleekburn. 3, T. Allison, Long Benton, Newcastle.

**JUDGES**.—*Poultry*: Mr. E. Hutton, Pudsey, Leeds; and Mr. F. Esquilant, Brixton. *Pigeons*: Mr. F. Esquilant. *Cage Birds*: Mr. T. Lowery, Low Fell, Gateshead.

## BAR-FRAME HIVES, AND THE AMERICAN SLINGER.

VERY much has lately been said and written in favour of this slinger or extractor. For aught I know, the statements we hear and see may be perfectly accurate. A clergyman from Winchester or the neighbourhood came here last August to spend a few hours in conversation about bees and their profitable management. He had then been using boxes, which he obtained from the grocers' at about 2d. each, for hives; and with his own hands (as I understood him) he had made bar-frames and fitted them into his boxes. He was then expecting to teach many bee-keepers how to possess good bar-frame hives at a cost of 4d. or 6d. each.

He had made a slinger or extractor, and had tried it. It did not act satisfactorily, inasmuch as the young combs were cast out of the bars by the motion or centrifugal force of the machine. Has anyone been more successful with the slinger in this country? I have been looking out and listening for evidence of the practical utility of the extractor amongst English bee-keepers. So far I have been unfortunate, for I have not heard of one instance of success. Last year was a very unfavourable one for honey-gathering, perhaps not affording an opportunity to those who have extractors of testing them. I have seen American evidence of the use and advantage of the slinger held forth by English traders to our view, but I attach but little value to the evidence of American success with the slinger. In America bees may collect less farina than they do in Britain, for here we have in almost every hive a superabundance of it. In summer the climate is hotter there than here. May I suggest that this extractor be fairly and extensively tested this year in England, and the results fully and accurately reported? If we kept bar-frame hives the contrivance would be speedily tested, and its operation exhibited to all the bee-keepers in the country who chose to come and see. I confess being at present rather sceptical as to its value to bee-keepers in this country, and regret that in the recommendations of its advocates and professed patrons there is nothing to break up and remove that scepticism.

The great recommendation of the slinger, according to its advocates is this, that it casts the honey out the bars, and these are replaced, thus saving the honey that is used in comb-building. When a thoughtful bee-keeper reads such statements, he is ready to ask how often this is done in a season. Before bees swarm almost every comb in their hive contains brood, and much of this brood, say one half, is unsealed. Does the slinger invariably cast the honey out and leave the brood undisturbed? or does some of the brood and farina go off at a tangent with the honey as the slinger is being whirled round. Such questions will rise up when we are told that the honey obtained by the extractor is inferior in quality to run honey, and is sold at a less price by so many cents, or half cents, per pound.

On using an extractor it is necessary to cut the lids off the cells of sealed honey. To us this appears to be a tedious and difficult operation, for very few combs are even or quite flat on their surface. Many other difficulties and objections to the use of the slinger arise. If no combs be built, old ones will become half full of farina, thus crippling the bees much for breeding and gathering honey. Hives filled with young healthy combs are incomparably better for bees and bee-keepers than old combs half filled with pollen, and no bee-keeper can prevent in this country the accumulation of a superabundance of this rubbishy pollen in his hives without frequently removing the old combs from them, and having them refilled with young combs. How this can be best and most economically done is another question. Meanwhile let us have satisfactory evidence of the value and success of the slinger, and I shall not fail to recommend its use to the bee-keepers of this country.—A. PETTIGREW.

BELFAST AND NORTH OF IRELAND ORNITHOLOGICAL SOCIETY'S SHOW.—Although this Exhibition will not occur until the

10th of December, we notice it thus early because the prize list is one of the most liberal we have seen. There are proposed to be eighteen three-guinea silver cups for poultry, the same number for Pigeons, and four for cage birds, in addition to the money prizes. We hope subscribers will promptly aid the Committee.

### THE QUEEN BEE.

I must believe that the views set forth by Mr. Pettigrew are conscientiously believed and entertained, yet I cannot and will not excuse him if he refuses or neglects to adopt the means of testing, by properly conducted experiments and observations, the various points at issue. In these days of advanced knowledge in almost every department of inquiry, mere assertion and theory are valueless in the face of facts, while haphazard guesses and inferences are worse than useless.

1st. In regard to the evolution of the worker bee. What is the proof advanced by Mr. Pettigrew that it is twenty-one days in the cell? He says, "The readers of this Journal know that I have again and again advised them to turn the bees out of hives on the twenty-first day after the swarms have been removed from them. . . . We find if we do it on the twentieth day after swarming all the workers are not hatched, and that those unhatched leave their cells after all the bees have been removed. This I have seen again and again—scores of times; therefore I prefer my own and others' statement of days to Mr. Lowe's twenty days."

Now, in regard to the advice here given of waiting till the twenty-first day before turning out the bees, my only remark is that if the object be to have all the brood hatched—drones as well as bees—the period should be still further extended two or three days. But let me ask if this is the proof I am called upon to accept as to the precise number of days occupied in the evolution of the worker bee? This, I apprehend, is no proof at all; it is merely an inference, a conjecture, which settles nothing. In order to ascertain the true period of development of the worker bee, we must not only know the hour and day on which the bee was hatched, but the hour and day on which the egg was deposited. For myself I claim no merit in stating that the worker is not twenty-one days in the cell, but comes forth a perfect insect on the twentieth day. I have simply verified by properly-conducted experiments and observations that fact which Huber, the "prince of apiarists," has long ago demonstrated, and which has been acquiesced in and confirmed by Dr. Bevan, Dr. Dunbar, the Rev. Mr. Langstroth, and many other eminent students of bee life.

It so happens that at this moment I have a case in point in my apiary. A pretty strong hive lost its queen in the spring. The bees held well together notwithstanding. On Saturday the 11th of April I introduced a fertile queen along with some two or three hundred bees—the whole stock of a weak colony, and joined them to the queenless hive. Some ten or twelve hours after I examined the hive, and observed, on drawing up a frame, that a considerable number of eggs were deposited. On Friday the 1st of May current, at the same hour, or exactly twenty days after the introduction of the queen, I pulled up the frame and found several young bees traversing the comb. If twenty-one days were required for the development of the insect, I should have seen no hatched bees till at the least twenty hours later, even on the assumption that eggs were deposited the very moment the queen was introduced.

2nd. What is Mr. Pettigrew's proof as to the transference of eggs by the bees from one cell to another? He says, "Hundreds if not thousands of times have we seen eggs in royal cells that were not there when the queens and swarms were removed. The eggs had been in worker cells, and removed by the bees to royal cells. This fact upsets the position Mr. Lowe has taken in asserting that the bees do not transfer eggs from worker cells to royal cells. If Mr. Lowe will visit me in a month or two I will show him scores of empty queen cells as soon as the queens have been taken from them to their hives, and three days later I will show him the same cells occupied by brood being reared into queens."

Now, if these were facts, I admit at once that my position would indeed be upset. But here let me suggest, May not Mr. Pettigrew be under a mistake in fancying that these royal cells found tenanted by larvae three days after the queen's removal were actually the identical royal cells in existence previously, or, if so, that they contained no egg at the time in question? There is such a thing as an optical delusion; and I therefore fear that, however much I should be delighted in paying a visit to Mr. Pettigrew's apiary on other grounds, yet on this I should, according to the old saying, simply have "my coming for my going," and that our conclusions might be somewhat similar (though of course from entirely different causes) to those narrated of two great statesmen, who, on entering the House of Commons with optics a little obscured by a too long *sedentary* after dinner, the one declared he thought he saw two speakers in the chair, while the other emphatically asserted that he could not even see one. Mr. Pettigrew's straw hives are so

spacious, and no doubt have, like others of their kind, so many concealed corners, that I fear our optics would also be obscured, and that it would be impossible to pronounce with certainty as to how the hive had been left regarding royal cells. Bees, the habits of the bee are the same in England as in Scotland, and I do not require to cross the border to be enlightened on this point, for in all my experience, and it is not a little, I have never witnessed the "facts" stated by Mr. Pettigrew in any case of artificialising or queen-rearing.

3rd. What is the proof furnished by Mr. Pettigrew as to the evolution of the queen bee in fourteen days?

Suppose Mr. Pettigrew's assumption is right, that eggs are transferred from one cell to another by the workers, and that eggs are set in royal cells by the bees after the departure of the swarm and queen, and that such eggs so deposited become fully developed into princesses in fourteen days thereafter;—the fact that fourteen days only are required for the perfecting of the royal bee from the period of its being transferred by the worker to the royal cell, is no proof that only fourteen days are required from the emission of the egg from the mother queen to its complete evolution. The eggs take three days in hatching, and unless Mr. Pettigrew can tell me the age of the egg when it is, as he says, transferred into the royal cell, he can have no data on which to found any conclusion whatever. Here it is, I think, where Mr. Pettigrew has fallen into error. Queens reared artificially—i.e., from eggs deposited in worker cells, and queens reared naturally—i.e., from eggs deposited in royal cells, occupy in reality the same period of time in their evolution. When, therefore, we say that a queen is reared artificially in thirteen or fourteen days, we count not from the time the egg is deposited, but from the period the larva destined for royal honours is chosen and operated on by the workers; and when we say that a queen is reared from the egg, either naturally or artificially, in sixteen days, we, of course, reckon from the moment the egg is deposited by the queen. The difference of two or three days between the two methods of procedure—that from the egg and that from the larva—is accounted for by the bees availing themselves of their power of operating on the worker larva, and not on the unhatched egg. Any discrepancies in the time of evolution after such operations are commenced, depend, no doubt, principally upon the age of the larva so chosen. I have had queens reared artificially in cases where they had a choice of larvae of all ages, varying from twelve to fourteen days, and one from the Egyptian race in somewhat less than twelve days; but in cases where the bees had no such choice, when they were only supplied with newly-deposited eggs, the period of evolution I found to be about sixteen days. My experiments in the rearing of queens are so numerous that it would only be occupying unnecessarily space in giving particulars and dates; but I think it may be safely said that from twelve to thirteen days is the average period required in the evolution of the queen bee from the moment the egg is hatched, which, as I have already stated, is three days, making, therefore, about sixteen days in all. Though this appears to be the normal time, yet I have known instances when the period of evolution was prolonged several days, owing, no doubt, to certain conditions of the hive, weather, and temperature. The effects of temperature exercise, according to all naturalists, considerable influence in the maturing and development of insect life. The general rule, however, holds good, notwithstanding these discrepancies, which are merely exceptional.

Now as to the contests of queens. I simply pointed out to Mr. Pettigrew what the rule was in the circumstances to which he referred—namely, when "two swarms are united" or "flung together" with, of course, fertile queens. In such a case the queens are not allowed to do battle, and one is always destroyed by the bees. If Mr. Pettigrew has witnessed a conflict in such circumstances, I should be obliged for the narrative; of course an exception to any rule may occur while there is a possibility, but all I can say is that in all my experience I have never seen it broken. In regard to virgin queens the case is very different, and mortal combats frequently take place between them; and even with mother queens when forced into contact under peculiar circumstances, such as when you confine two together along with a few bees, I have noticed them engage in conflict, the bees being too few to encase either, and thus prevent it; but even in such unfavourable conditions, where the natural instinct of the bees must be affected, I have seen such an encasement resorted to. The exhibition of queen duels by Major Munn, referred to by Mr. Pettigrew, must have been under such circumstances as these; but most probably by virgin queens, similar to the interesting narrative given some four years ago in these pages by that excellent and trustworthy correspondent "R.S."

Lastly, in regard to the fertility of the queen bee, and that "some trustworthy experiments have indicated four and six thousand eggs per day each queen," I am informed that this statement is from an American source, and appeared in this Journal some years ago. I cannot lay my hands upon it, but perhaps it is not of much consequence. The real point is, not

what the queen can or may be supposed to do in other countries and other climes, but what we find from our experience she really does in our own apiaries; and if we note this carefully we shall be less inclined to have recourse to American statistics in connection with the queen's ovipositing capabilities.

I have not attended to Mr. Pettigrew's peculiar views as to the sexual or rather non-sexual character of the eggs as emitted from the ovarium of the queen, and that a royal princess can be reared from a drone egg, or eggs in drone cells. From the fact that he has not reiterated these in the recent article on the queen bee, it is to be hoped that he has abandoned them as untenable.

I hope I have dealt fairly by those I have here referred to. I have endeavoured to avoid all imitation of the special pleading and "eloquence coupled with assumptions and presumptions" of the barrister to which Mr. Pettigrew refers. I have laid before him only plain and unadorned statements and facts, and if these will have the effect of inducing Mr. Pettigrew to institute fresh experiments after the fashion I have indicated, I have only now to express the hope that he will kindly favour us with the results.

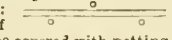
After writing the above I have just noticed Mr. Shearer's article, in which he gives a case of a queen being matured on the fourteenth day after the time the egg was supposed to be deposited. I have only time here to ask Mr. Shearer if the evolution of the queen on the sixth day after being sealed, as there stated, is in accordance with his other experiences in queen-rearing?—J. Lowe.

### OUR LETTER BOX.

**ERRATUM.**—On page 413 the title under the cut should have been "A cross between a Dominique cock and a Guinea hen," and not that accidentally and erroneously put by the printers.

**BOOKS (E. M. D.).**—Brent's "Canary and British Finches." It may be had free by post from our office if you enclose nineteen post stamps with your address.

**BRAHMA HEN ON BANTAM EGGS (T. W.).**—If you have no other broody hen it is a case of "needs must," but we do not think you will be successful. We should advise you to buy or borrow a Bantam or very small hen under which to put the eggs. Brahmas are good and careful mothers, but Game chickens are hatched so small, and the Brahma is so heavy, that there must be constant accidents. It is more than likely if you make inquiry you will find some neighbour in difficulty the other way; he may want to set large eggs, and may have only a small hen. Change for the time.

**GOLD AND SILVER PHEASANT CHICKS (N. H.).**—For the first three or four days after the poult is hatched they should be kept in a small enclosure in front of the rip. It should be on short grass in a dry spot, and is easily made. It should be the width of the rip in which the hen is confined, from 3 or 4 feet in length; two planks of that length and 12 inches high, with one of the same height and the width of the rip are all that is required. They are generally fastened with pegs thus:  Where Pheasant-breeding is an annual pursuit, some of these frames are kept ready made. The top must be covered with netting (wire is the best) to protect the young from enemies, and their food from depredators. Their food should be chopped egg, curd, bread and milk, and dough. They require feeding very often during the first three days, and frequently afterwards. When this time is passed the little enclosure may be done away, but the hen must be carefully kept under the rip. The question of water is a vexed one. Many do without it altogether. We prefer a middle way. We do not approve of their having water always by them, but we would certainly give it morning, mid-day, and evening. Fresh water every time, and spring water.

**TAKING CHICKENS FROM THEIR MOTHER (H. F. C.).**—Time of year has much to do in answering your question. In the autumn or winter the chickens would die if the hen left them at six weeks old. At this time of year they will not. If they have been accustomed to roost in the rip with the hen, they will still go there after she has left them. In such a case it will be a wise precaution to put up every night a board in front of the rip, and to fasten it there. It is a protection from anything harmful. They will only require it for about three weeks. At whatever time a hen may lay, she is no mother to her chickens afterwards. She knocks them about. In hot weather the chickens do not want her cover at night; during sharpest winds they do. It will advance her laying if she has her liberty.

**SPANISH HENS DYING (W. P. B.).**—Do not feed so liberally. The hens are too fat, and the egg-passage probably contracted. We will have another opinion, and publish it next week; but at all events lower the diet.

**ROOSTING PLACE FOR CHICKENS.**—Let "Puzzled" place a deal box about 1 foot wide, without a lid, upon its side, and lay a little hay in it. The chicks will be glad of the shelter this affords from the worry of the hens.—INEXPERIENCED.

**TAR ON FANTAILS (F. S. H.).**—We were once in exactly the same trouble ourselves; our snow-white pets became tar-smared. We tried butter or grease, and the web of the feather was injured; we tried scraping, and no success; then we pulled out all the feathers we could, and clipped the tarry ends off others, and made our bird look tolerably decent; but it was not in nice trim until the next moult put all right. The American who invented the punishment of tarring and feathering knew well what he was about, for tar and feathers stick together most pertinaciously.

**POINTER (J. L.).**—It is an exaggeration, but portrait painters say that no likeness is good unless it appears better than the original. We shall not notice the book until completed.

**GROWN OATS (C. R.).**—We do not know Messrs. Marsh's address. They should advertise.

**SALT CAT (C. R.).**—We extract the following from Brent's "Pigeon Book." "Salt cat is composed of about equal quantities of a clean nutritious loam, such as brickmakers use; a coarse gritty sand, or fine gravel, in which the grains are about the size of pins' heads; and old mortar; to this is added a small quantity of large-grained salt. Some persons, to make it more attrac-

tive, add aromatic seeds, such as cummin, anise, coriander, and caraway. The whole should be mixed up with chamber-ley into the consistency of mortar and placed in a crock, the sides of which are perforated with many holes large enough to admit the Pigeons' heads, and covered with a lid to keep off the weather."

**TWO EARLY SWARMS (T. P. T.).**—Your first swarm on the 28th of April, and a second from the same hive on the 10th of May, are very early. We read of one obtained near London in April, and heard of another at Didsbury, near Manchester, about the same time this year. All have been unusually early. If you are kind to your first swarm and feed it a little till the hive be filled with combs, you will probably get two virgin swarms from it. Thus you may obtain an increase of Ligurian stocks in your apiary.

**STOCK BLOWN OVER (Not a Drone).**—Let your hive remain as it is till ready for swarming, then take a swarm from it artificially, and three weeks afterwards drive all the bees out of the old hive into an empty one. Thus you will secure two swarms without destroying any brood. If you were to drive all the bees out now into a new hive the brood would be all lost, and the swarm would probably do better than the first one, which we are advising you to take by-and-by. The second lot of bees would have a young queen. As your hive did not swarm last year, the queen in it is at least two years old, and may be older. Artificial swarming was explained in our pages some weeks ago.

### METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.						Rain.
1874.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
May.		Dry.	Wet.			Max.	Min.	to sun.	On grass		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
We. 20	30.244	55.9	48.6	N.E.	52.4	64.8	39.0	117.5	92.7	—	
Th. 21	30.008	57.1	51.2	E.	53.9	65.9	39.7	118.2	95.6	—	
Fr. 22	29.615	62.0	55.8	N.	54.9	73.6	49.6	109.8	45.2	0.251	
Sat. 23	29.504	58.7	62.9	N.	56.2	63.0	51.3	74.9	61.2	—	
Sun. 24	29.546	59.4	56.2	S.W.	55.8	79.2	53.5	119.2	51.4	—	
Mo. 25	29.765	64.1	58.7	N.W.	56.5	68.3	61.4	99.8	46.4	0.660	
Tu. 26	29.954	61.2	65.8	N.	55.4	71.1	47.8	120.8	44.6	—	
Means	29.875	59.0	61.3		54.9	69.6	47.2	106.0	49.9	0.911	

### REMARKS.

20th.—Cold, dull at times, but fine.

21st.—Fine throughout; cold in early morning.

22nd.—Warm, fine, bright morning; thunderstorm began at 4 P.M. with heavy rain; close damp evening.

23rd.—Rain in early morning; slight showers at intervals during the day.

24th.—Warm, sunny, bright day; beautiful evening.

25th.—Bright in early morning, soon became cloudy; thunderstorm commenced at 11.30, and was heavy from noon to 1.30 P.M.; heavy rain; fine evening.

26th.—Fine, pleasant, and bright throughout.

Barometer lower, temperature higher, and air less dry than in previous weeks.—G. J. SIMONS.

### COVENT GARDEN MARKET.—MAY 27.

A FAIR summer trade is going on notwithstanding the interruption caused by the holidays; but owing to the increased supply of the best produce from under glass a large reduction has had to be submitted to to keep up the demand for such articles as Pines, Peaches, Nectarines, and black Grapes. Old Potatoes have again advanced, while there is a large supply of new ones through the usual channels.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples..... doz.	2	0 to 9	Mulberries.....	1 lb.	0 to 0 6
Apricots..... doz.	2	0 4 0	Nectarines.....	doz.	12 0 24 0
Cherries.....	1/2 box	2 6 0	Oranges.....	100	4 0 16 0
Chestnuts.....	bushel	0 0 0	Peaches.....	doz.	12 0 39 0
Currants.....	1/2 sieve	0 0 0	Pears, kitchen.....	doz.	2 0 6 0
Black.....	do.	0 0 0	dessert.....	doz.	0 0 0 0
Figs.....	doz.	8 0 15 0	Pine Apples.....	lb.	6 0 12 0
Filberts.....	lb.	1 0 1 6	Plums.....	1/2 sieve	0 0 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	doz.	0 0 0 0
Gooseberries.....	quart	0 6 0 9	Raspberries.....	lb.	0 0 0 0
Grapes, hothouse.....	lb.	4 0 12 0	Strawberries.....	1/2 oz.	0 6 1 0
Lemons.....	100	8 0 10 0	Walnuts.....	bushel	10 0 16 0
Melons.....	each	4 0 8 0	ditto.....	100	2 0 2 0

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz.	3 0 to 8 0	Lettuce.....	doz.	1 0 to 2 0
Asparagus.....	100	3 0 6 0	Mushrooms.....	pot	1 0 3 0
French.....	doz.	3 0 10 0	Mustard & Cress, pot	0 2 0 6	
Beans, Kidney.....	100	2 0 0 0	Onions.....	bushel	4 0 7 0
Broad.....	bushel	0 0 0 0	pickling.....	quart	0 6 0 0
Beet, Red.....	doz	1 0 8 0	Parsley per doz.	bunches	2 0 4 0
Broccoli.....	bundis	0 9 1 6	Parsnips.....	doz.	0 9 1 0
Cabbage.....	doz	1 0 1 6	Peas.....	quart	2 0 5 0
Capicums.....	100	0 0 0 0	Potatoes.....	bushel	8 6 0 0
Carrots.....	bunch	0 6 0 0	Kidney.....	do.	0 0 0 0
Cauliflower.....	doz.	4 0 10 0	New.....	1/2 lb.	0 0 0 0
Celery.....	bunch	1 6 2 0	Radishes.....	doz. bunches	1 0 1 6
Colewort.....	doz. bunches	2 6 4 0	Rhubarb.....	bundle	0 9 1 0
Cucumbers.....	each	0 6 1 0	Salsafy.....	bundle	1 6 0 0
pickling.....	doz.	0 0 0 0	Scorzoner.....	bundle	1 0 0 0
Endive.....	doz.	2 0 0 0	Sea-kale.....	basket	0 0 0 0
Fennel.....	bunch	0 8 0 0	Shallots.....	lb.	0 3 0 0
Garlic.....	lb.	0 6 0 0	Spinach.....	bushel	2 0 0 0
Herbs.....	doz.	0 9 0 0	Tomatoes.....	doz.	3 0 6 0
Horseradish.....	bundle	3 0 4 0	Turnips.....	bunch	0 3 4 0
Leeks.....	bunch	0 3 0 0	Vegetable Marrows.....	0 0 0 0	

## WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 4-10, 1874.	Average Temperatures near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days	m. s.	
4	TH	Royal Horticultural Society's Show opens.	69.3	44.4	56.9	15	48 43	8 48	16 0	5 7	20	2 2	155
5	F	" " closes.	70.5	47.3	58.9	24	48 3	9 8	16 0	29 8	21	1 51	156
6	S	" " "	69.9	47.6	58.8	22	47 3	10 8	37 0	54 9	22	1 41	157
7	SEN	1 SUNDAY AFTER TRINITY.	69.3	46.5	57.9	26	46 3	10 8	54 0	18 11	24	1 50	158
8	M	Bath and West of England Society's Show [opens.	70.6	46.4	58.5	15	46 3	11 8	7 1	after.	1	1 39	159
9	TU	" " "	70.8	47.2	59.0	20	46 3	12 8	21 1	9 2	25	1 7	160
10	W	Royal Botanic Society's Show.	69.6	46.9	53.3	19	45 3	13 8	35 1	36 3	26	0 56	161

From observations taken near London during forty-three years, the average day temperature of the week is 70.0°; and its night temperature 46.6°. The greatest heat was 90°, on the 6th and 7th, 1846; and the lowest cold 31°, on the 9th, 1862. The greatest fall of rain was 1.48 inch.

## STOCKS FOR SPRING AND EARLY SUMMER.



HOW lasting are first impressions! I believe it was a bed of Stocks which first kindled the horticultural spark, and impelled me with a restless longing and irresistible desire to follow in the craft of Adam, and become a tiller of the ground, a worker—I did not care how humble—in a garden of flowers. I need not tell of my little struggling and scheming to attain this end; suffice it to say that, like many another, I have had enough, and sometimes too much of it, yet verily believe that in any other calling with better emolument (and in truth such has been rejected) I should not have been so content as in the work of my first love implanted by the Stock. Long years have passed since then, and many a fine sight and thing forgotten, but the Stocks remain as clearly photographed on the mind as ever, as vividly and distinctly as the first smile of one who for years, as another first love, has been dearer to me than the flowers. Both these first loves will be dear to the end; but I will not dwell further, except on the Stocks.

The Stocks were a bed of old Bromptons in an old baronial garden. They were grown as we never see them grow now. A large quarter of the kitchen garden was set apart for them, and they were planted—or rather the doubles left to stand—just 2 feet apart all ways. They were like floriferous trees rather than mere plants, a sea of bloom of the richest, and redolent of almost overpowering perfume. Where are these fine Stocks now which were once so common that huge paper bags of seed hung in almost every garden house of squire and cleric, and even those of less note? That was in the garden period of perfume, when sweet and simple flowers had a greater charm than a gigantic conglomeration of gaudy colours. The colour period, however, grew apace, and swept all before it. Old things were relegated to the limbo of oblivion. But that period has now passed the zenith of its power, and is succeeded by a taste in massing more elegant, educated, and refined. Without saying one word against it, and free from any mental wish for its discontinuance, one cannot but observe that many are now giving a welcome back to plants which made the gardens of former generations, if not brilliant, yet abodes of quiet colour and homely sweetness. These spring and early summer Stocks are again playing an important part in many gardens, and seed-growers are vying with each other in raising and offering the best strains. A demand for these things is evidently budding, and although it is not to be expected that they will ever again be so extensively used as they were thirty years ago, yet there are undoubted signs—speaking in fashion parlance—of their “coming in.” Let them come, and whenever justice is done them they may be trusted to delight what they are sure to have—admirers.

The old Brompton is one of the finest of all Stocks; its towering spikes, massive blooms, and high colour being

especially striking. It is emphatically an amateur's plant, and one of the most telling, when well grown, of any that can be used either in a mixed garden or for a great glorious mass in a large bed. “All very well,” some may say, “but what of the bed when the Stocks are gone?” My answer is, Plant it with Asters. Try this another year. Anyone can do it, it is so simple, and almost costless. Get a packet of the Stock; it may cost a shilling. Sow it in the garden in a drill very thinly, just as if it were Onion seed. Sow in June, and if dry soak the drills thoroughly before putting in the seed. It is simply labour in vain watering the surface of a seed bed in hot weather after the seed is sown; the watering must be done before, and then if the weather is very bright shade the surface until the germinating seed cracks the ground, and no longer. When the Stocks are about 2 inches high and stout, as they should be if thinly sown, transplant in a very open airy place in soil firm rather than light, and poor rather than rich. Remember a woody, not a sappy, growth is the point to aim at. Sow about the same time and in the same way some Golden Feather, and treat it the same; it may cost sixpence. In October the plants should be hard stocky stuff. If the Stocks are plentiful, plant in the blooming bed at once; plant pretty closely together, so that if half are singles they can be drawn out, and still leave sufficient for the beds. Surround at the same time with the Pyrethrum.

If, however, the Stock supply is limited, winter them under a south wall or fence where they will have some shelter from the frost, or, what is as pernicious, excessive wet. Sometimes the plants will pass the winter in the open bed, and the blooms will be finer; but in case of accident it is well to have a store to draw from to replace or fill up blanks, therefore in November have the bed full, and as many more planted on a south or dry sheltered aspect as will fill it if wanted in February or March, according to the weather. In winter the bed will be neat, in spring interesting, and in early summer—May and June—rich, sweet, and, I was going to say, magnetic, as it is sure to attract.

But the “afterwards.” Well, sow Victoria Aster in light rich soil the first week in May quite in the open—that is, without any glass shelter. Sow thinly. As soon as the young plants can be fingered comfortably fancy them Celery, and treat accordingly—that is, spread a layer of manure 3 inches thick, and over it an inch or two of soil, and on this prick-out 5 or 6 inches apart, and always keep watered. In July the plants will be in fine condition for moving, almost showing the blooms, yet with care they will not lose a leaf. Now pull out the Stocks, and put in the Asters, first digging-in manure, and also giving a thorough soaking—a regular deluging—of liquid manure, and then with fair attention and good luck one of the finest beds of Asters will follow one of the best beds of Stocks ever seen. It will be a bed fine from frost to frost, gay before the Geraniums are open, and gay after they are over. This little example is given to get over the much-feared and ever-paraded lugbear of a bare bed in autumn. Empty in spring would seem to

be a virtue, but empty in autumn a blunder and calamity; yet the best of all is that neither circumstance is a necessity. It is written also for the amateur having a garden but no glass, and who is not in a position to purchase expensive plants to effect what he desires—a garden gay and enjoyable, and yet whose taste tends towards massing rather than mixing. For this latter mode nothing is better than these fine old Stocks.

They are worthy also, to those having pits, of being wintered in pots, three in a pot, and shifted-on for in-door decoration, or planting-out, when they flower early, which is sometimes of importance. When the winter is passed they cannot well have soil too rich, and as summer approaches they will know what to do with liquid manure. To sum-up, these Stocks are about as hardy as Broccolis, and as easily raised.

And now a word as to the Lothians; but I had better leave them for my next letter, except in saying that those who wish them to bloom in winter and very early in spring under glass must sow at once in good soil under a hand-light. If in the open ground and heavy rains fall, they are apt to damp-off when quite young. They are fine subjects for the purpose named, but to have them fine as well as early not a day's unnecessary delay should be permitted in sowing, and if the seed-bed can have a base of gently-heating manure all the better. For ordinary purposes of summer flowering in the garden, and especially if there is no glass for wintering, sowing may be deferred until June. My Lothians for early work are nearly ready for pricking-out, and to-day I have been throwing some year-old plants away, which have given a fine display, and fine for cutting for the last three months. They were sown in May on a gentle hotbed.—J. WYNT.

#### THE KITCHEN GARDEN.—No. 8.

Most of the preliminary work having been described, there yet remains one thing to be considered before going on with the formation of the walls, with which it might interfere, and that is the means of conveying water. Without a good supply of water no garden can be considered complete, for it is essential in every department, and is a principal agent in the nourishment and growth of everything cultivated in the garden; it is a purifier as well.

On this, however, I will not dwell, but will proceed to the consideration of the best and easiest means of obtaining a supply, and conveniently carrying it to every part of the place so that it may be easily and quickly distributed where wanted. I hold that there is no work that will pay better for being well done than this, as convenience in this one matter is better than extra labour at any time; for carting water, whether by manual labour or by horse power, is both tedious and expensive, as well as unsatisfactory, because it is seldom that time can be spared to give the crops a plentiful supply. I have experienced this difficulty in a large establishment, where the means of obtaining water appeared to have been the last consideration instead of one of the first, and the labour of watering was one of the largest items of expenditure for the summer months.

In the first place, wherever a garden may be situated, one of the first considerations should be to provide accommodation for storing all the rain water that can possibly be obtained from the glass houses and other buildings. This is believed to be the best sort of water for use among plants and vegetables, and if the situation will allow of it, even the water that is carried off by the drains should be allowed to accumulate in some convenient place, so as to be useful when wanted. This done, it will be necessary to learn whence the regular supply is to come.

In places of large scope water is many times to be found at an elevation above the gardens. This is, of course, an advantage, because at comparatively little expense a plentiful supply can be secured; in others there is a lake or river within a reasonable distance, and water can be sent up by hydraulic rams into a large reservoir situated high enough to allow water to run to any part of the garden. This is a more expensive mode, but in many cases there is no alternative but to adopt it; it has the merit of being perfect and durable. For the most part amateurs' residences are situated near towns, and the above means of obtaining water will not often come within their compass, consequently water is supplied from wells dug about the grounds, and the general supply provided by a water company. Now, whichever of the latter two sources are depended upon, it will be wise to have a store of water always

on hand, not only to become softened by the air, but in case of any extra quantity being required. I know of one place in Middlesex where the water for the garden is supplied from a well situated in the middle. At each corner of the garden there is a broad open slate tank sunk into the ground, and these tanks are filled every morning, the water being conveyed to them by square wooden troughs in convenient lengths, and about 3 inches deep by 6 wide. I should think triangular troughs would have done as well, and they would have been cheaper, because more easily constructed and requiring less material. At the well there is another large tank, which is always kept filled. The garden is watered from these tanks with but little trouble; and I should think that, from the size of an amateur's garden generally, the above would be a good plan to adopt, unless there is an opportunity of getting water by either of the other ways named above.

By whatever mode water is obtained, by all means let it be conveniently laid on, so that at every quarter it may be applied without walking for it. If it is conveyed round the gardens in pipes underground, let there be taps fixed in them at intervals, so that a hose may be screwed on of sufficient length to convey the water to where it is required. This plan is only useful when there is a pressure of water to give it force sufficient to carry it through the pipes. If the pressure is great enough, and the pipe is fitted with a rose, the trees on the walls may be conveniently syringed and the borders watered, which will be an advantage in point of time and a benefit to the trees.—THOMAS RECORD.

#### WHAT IS REPOSE?—No. 2.

A WEAK point in very many gardens is a want of finish, a disjointed meaningless appearance often being perceptible in conspicuous parts of the dressed grounds; and the frequent attempts to remedy this evil, while tending to prove its general recognition, are not often so successful as could be wished. Repose is evidently wished for, but the difficulty is how to impart it successfully. Take, for example, a group of shrubs which, from mismanagement when the shrubs were young, presents 2 or 3 feet of bare stems offensively to the eye. Attempts to conceal this with flowers are made in summer, but with indifferent results, for the flowers, starved by the greedy shrub-roots, serve rather to attract attention to the deformity than to conceal it. There can be no doubt that the use of flowers at all in such a case is a mistake, there being as little beauty in a ragged border of flowers as in a straggling group of shrubs. Far better would it be to turn our attention to the improvement of the shrubs by judicious pruning, layering, or replanting; and so by bringing the group as near to perfection as might be, it becomes complete in itself, and regains its legitimate importance as an ornamental feature.

Bare spaces under the shade and drip of trees are blemishes of frequent occurrence which can be easily remedied. Plants which thrive in shade are sufficiently numerous to afford ample materials, not only for the concealment of defects, but for imparting as much finish and beauty to retired spots as are usually visible in the more prominent lawn or flower garden. Ferns love the shade of trees, as everyone knows, and a secluded corner or "bosky dell" suits them admirably. But it is not with Ferns that we should seek to clothe bare spaces under trees where turf has failed. Ivy, from its evergreen character, hardy and accommodating nature, and, above all, from its elegant appearance, is the best of all plants for this purpose. A little extra care and culture are requisite till the plant is established; afterwards, when it has grown into a compact mass, a trifling amount of labour will suffice to keep all neat and trim. Nothing can look better than broad edgings of it along shady walks; it also clothes bare heaps or mounds with perennial greenery, imparting a life and brightness, a soft and quiet beauty, to many a barren spot. It is surprising that a plant with which all are familiar should be so much neglected, for it is easily propagated; and although it thrives best in a rich soil, it is perfectly healthy in a poor one.

Frequent attempts are made to form ribbon borders along the front of shrubs; and here again the failures that occur are usually caused by the poverty of the soil, or by the drip and shade of overhanging trees. Wherever there is sufficient space the best remedy is to continue the turf close up to the shrubs, and to make a bed for the flowers a few yards in advance upon the turf; by which means an agreeable contrast is produced, crowding and confusion are altogether avoided, each feature has full play, bearing the stamp of individuality, while a soft

pleasing harmony—really repose—pervades the entire scene.—  
EDWARD LUCKHURST.

## STOVE PLANTS AND THEIR CULTURE.—No. 2.

*BOUGAINVILLEA SPECTABILIS* is of very free scrambling habit, with acuminate leaves and splendid rose-coloured bracts in bunches like Hops, but, unfortunately, it is a shy bloomer. It is from South America. It should be planted out in sandy turfy loam with a fourth of leaf soil, good drainage being secured, and the roots limited to a space that need not, for a large plant, be more than from 9 to 12 square feet. The shoots ought to be trained near the glass—not more than 16 inches from it, nor nearer than 9 inches, and so far apart that the leaves may not overshadow each other. The shoots, as they show, must be rubbed off to prevent overcrowding, not allowing them to grow several feet and then cutting them out. The plant should be well supplied with water in spring when it begins to grow, and throughout the summer up to August, when watering should be left off, none being given as long as the leaves keep from flagging; even if the plant flag under hot sun but recover at night, do not water. In winter keep dry, watering only when the plant shows for flower, as it may do in December, but usually in spring. After the appearance of bloom water freely, and after flowering cut-in the shoots to within two or three eyes of their base, leaving a sufficient number of well-ripened shoots for extension and for covering the trellis. Growth to be encouraged by frequent sprinklings overhead and top-dressings of loam and leaf soil, increasing the supply of water in proportion to the growth. Cuttings of the young shoots a little firm, in sand over sandy loam with a little peat, well drained, set in a close frame, or covered with a bell-glass, and placed in a bottom heat of 80°.

*CLERODENDRON BALFOURIANUM*.—Deciduous twiner, with smooth, oblong-ovate, deep green leaves, and large dense cymes of flowers, of which the calyx is of a creamy white, and the corolla rosy crimson, having a very effective appearance. It is a decided improvement on *C. Thomsonæ*, being larger in all its parts. Hybrid, or garden variety, emanating from the Edinburgh Botanic Garden.

*CLERODENDRON SPECIOSUM*.—Deciduous twiner; smooth, oblong-ovate, dark green leaves, and large dense clusters or cymes of flowers; the calyx pale reddish purple, and the corolla deep rose. It is a hybrid between *C. Thomsonæ* *Balfourianum* and *C. splendens*.

The time of flowering is in spring, April and May, on short stubby shoots proceeding from well-ripened wood of the previous year; the object, therefore, of the cultivator should be to secure strong shoots and to get them well ripened. Sometimes the plants flower more or less continuously throughout the summer, but not when the wood is well ripened, and such continued flowering most generally occurs on plants grown in pots and trained to trellises at some distance from the glass. Pruning should not be done until the flowering is past, and should be confined to cutting the flowering shoots to the wood eyes next below the cyme of flowers, leaving the other leaves undisturbed, and encouraging young shoots from the bottom of the rafter; these should be trained up the roof, and not stopped until they reach the limit of extent. When the old shoots are so numerous as to crowd each other and the young shoots, they may be in part or wholly cut away, having young to supply their place. The watering should be liberal when the plants are growing freely, as well as when in flower, continuing it through the season of growth, along with moisture overhead; but when growth is complete gradually withhold water, and leave it off altogether by October. The wood being thoroughly ripened the leaves will fall, and the plants need no water during the winter, or only a little to keep the wood plump. In spring, when they begin growth, water should be given, loosening also the surface soil, and applying a light top-dressing. Cuttings of the firm stubby side shoots, taken off closely in spring or early summer, inserted in sand over sandy peat, placed in a close frame, or covered with a bell-glass, and set in bottom heat. Soil two parts light fibrous loam, one part each sandy peat and leaf soil, with a sixth of silver sand, and a similar quantity of charcoal in pieces the size of a walnut, with good drainage.

*IPOMEA HORSFALLIÆ*.—Evergreen twiner, with deep green, brownish-purple-tinted leaves, divided into five leaflets, and the flowers borne in clusters of from ten to thirty or more. They are of a bright rosy crimson, in form and size resembling a *Convolvulus*, which it is, and, like all flowers of this family,

very beautiful, yet they soon close after being fully expanded; but those in each cluster being so numerous, and succeeding each other so rapidly, the plant is seldom out of flower from October or November to March inclusive. It is of rather strong growth, and in a border succeeds admirably. East Indies.

Pruning should be done in spring—April, or after flowering, before new growth takes place, the flowering shoots being cut back to within two or three eyes of their base; but as the plant, like most others, is disposed to start strongly from the highest part of the old shoots or stems, these should be depressed so as to ensure the breaking of the eyes at the base of the rafter, and when they are somewhat advanced the stems and shoots may be secured to the trellis. If there is little but bare stem at the base of the rafters, cut back the stems to some young wood there, and this will give young shoots from that part, securing thereby the covering of the trellis from the base upwards. The shoots ought to be trained in their full length, and fully exposed to light and air. Top-dress the border with fresh soil after pruning, and water moderately, increasing the amount with the growth, giving it abundantly when the plant is in full growth; but when growth is complete, as it ought to be by August, reduce the supply of water, applying it only to keep the leaves fresh, and so on through the winter, as with moderate moisture in the soil it will flower during the winter months. Avoid making the soil wet in winter, a sodden soil not being suited to this plant, especially at that season. A moist atmosphere, with sprinklings overhead morning and evening, is, during growth, very beneficial. Equal parts light turfy loam and sandy peat, a fourth part leaf soil, a sixth of silver sand, and a similar proportion of nodules of charcoal, with good drainage. Cuttings of the short side shoots in sand over sandy peat in a close frame or covered with a bell-glass in brisk bottom heat.

*I. LEARN* has deep red or crimson flowers, produced at the end of summer (September), and is from Ceylon. It is suitable for roof-covering, and requires treatment similar to *I. Horsfalliæ*, which is, however, superior to it.

*I. FIGIFOLIA*.—Fig-like leaves, the plant being a deciduous twiner, having purple flowers late in autumn, generally October, and occasionally in spring. It is only of moderate growth, and may be grown in a pot. Buenos Ayres.—G. ABBEY.

## MERCURY OF LINCOLNSHIRE—CHENOPodium BONUS-HENRICUS.

A FEW weeks ago (page 258), I noticed an article in your Journal by Mr. Wright on the vegetable extensively grown and eaten about here, but I believe unknown in the metropolis, called Mercury, or, as it is vulgarly pronounced in these parts, "Markwherry." I assure you it is a first-class vegetable, an excellent tonic, and highly popular in this county. I have several beds of it, and for many weeks, or even months, in the early period of spring and summer, it is enjoyed at almost every day's dinner. I deem it next, if not equal, to the favourite Asparagus.

As to cooking, it requires boiling about half an hour in water in which a quantity of salt is placed to preserve its greenness. Serve it at table either with melted-butter sauce, or let it be eaten with the gravy from meat on the plate.

I hope you will enjoy it, although I am afraid somewhat of its freshness and flavour will have departed by the time consumed between its being cut and your partaking of it. If it is faded by the journey, place it in fresh water a few hours to restore its life.—GEORGE BOOTHBY, Louth.

[The bundle of Mercury arrived very fresh, and we pronounce it a most excellent culinary vegetable. The leaves were cooked as Spinach, and were quite equal to it; and the stalks were cooked like Asparagus, and though not equal to that in flavour, were in our opinion as good as Sea-kale. This Mercury has the great merit of being hardy, and without any special care producing a continued harvest throughout the spring and early summer.—EDS.]

COMPACT PLANTS OF CYTISUS.—I should like to know the routine of culture adopted in producing the compact floriferous plants of *Cytisus*, or *Genista*, I saw selling in Covent Garden at 1s. each. There must be some quick and easy way of getting such plants at the price named, which I and many another countryman are strangers to. You might reply in the correspondence column. I am sure the information would be generally useful. One might travel a hundred miles in the

country and not see such perfect, handy, decorative plants as those I refer to, about 1 foot to 18 inches high and through.—W.

### THE FERNS OF ST. HELENA.—No. 2.

**LASTREA NAPOLEONIS.**—This very beautiful plant is extremely rare in cultivation, and indeed would not appear to be plentiful in the island to which it is peculiar. The caudex and base of the fronds are covered with large dark-brown-coloured chaffy scales. Fronds somewhat triangular in outline and deep green in colour; they vary from 2 to 15 inches in height, pinnate, the pinnae being closely set and deeply lobed, the lower pair being usually twice-divided. It must be reckoned amongst the most handsome of the genus for the decoration of the cool fernery. The only recorded localities of this species are near the summit of Diana's Peak and in the vicinity of Napoleon's tomb, St. Helena.

**L. CORIACEA.**—This has been quoted to me as a native of this island, but as I have never seen an authentic specimen or a recorded locality I am anxious for more information; perhaps some of my readers can enlighten me.

**L. COGNATA.**—A large bold-growing plant, resembling a gigantic form of *L. Napoleonis*, and evidently nearly allied to that species. It varies from 2 to 4 feet or more in height, broad and spreading; caudex very stout, densely clothed with large dark-coloured chaffy scales, which also ascend the stipes; fronds bipinnate at the lower extremity but pinnate above, the pinnae being closely set, very coriaceous, and dark green. It is found near the summit of Diana's Peak and is peculiar to the island, but hitherto, as far as I am aware, has not been introduced in a living state to this country.

**L. PATENS.**—This species has a wide distribution, and has long been in cultivation. If planted-out in the stove fernery it makes an extremely handsome specimen, throwing-up pinnate fronds nearly 3 feet high; the pinnae are deeply lobed, prettily eared at the base, and vivid green. It is a very effective and robust plant, which should find a place in every fernery where space can be afforded it. It is found in many parts of Tropical America, the West Indies, and St. Helena.

**PHLEOPTERIS DIANE.**—A magnificent bold-growing cool-house Fern, which I was delighted to find had been introduced in a living state during the past year. The caudex is stout and decumbent, clothed with large coarse chaffy scales, 2 feet or more in length and about a foot broad, pinnate, saving at the bluntly-acuminate apex, where they are pinnatifid. The pinnae measure some 6 or 7 inches in length; they are stout and leathery, dark green on the upper side, below furnished with short woolly hairs. It has been suggested to me that this is probably the same plant as *Lastrea Napoleonis*. With this, however, I cannot agree; its character of being uniformly pinnate to the base at once takes away that deltoid appearance which is such a marked peculiarity in the outline of the fronds of *L. Napoleonis*, independently of other widely distinct characters. It is found upon Diana's Peak at considerable elevations.

**HYPOLEPIS RUGULOSA.**—This forms a beautiful object if planted in the fernery near some jutting boulder, over which it may scramble and thus clothe its surface with beautiful verdure, or it may be made very effective treated as a basket plant. Caudex creeping, reddish brown in colour. Fronds varying from 10 to 30 inches in length, according to the locality in which it is found; they are tripinnate and somewhat deltoid in outline, but in this also it is extremely variable. It is not peculiar to St. Helena, but is found in New Zealand, Australia, the East Indies, China, and various parts of South America.

**PLEOPELTIS LANCEOLATA.**—In this species we have a beautiful, dwarf-growing, erect plant, which may be grown as an ordinary pot plant, or it will thrive admirably in the Wardian case. The fronds are rendered strikingly handsome by the large sori. It is a free-growing plant, known to some by the names of *P. lepidota*, or *Polypodium macrocarpum*. Native of various parts of Tropical America, the Cape of Good Hope, Isle of Bourbon, and St. Helena.

**POLYPODIUM MARGINELLUM.**—A pretty little species, which if introduced in a living state would prove very attractive in a Ward's case. It varies in height from 3 to 6 inches. The fronds are linear lanceolate in shape and entire, deep green on the upper side, paler below. This species is found in various parts of the West Indies and America, as well as upon Diana's Peak, St. Helena.

**MICROSTAPHYLIA BIFURCATA.**—This is a very curious Stag's-horn-fronded little species, one which I have frequently received

in a living state, but it is extremely difficult to establish. It is found in sheltered moist places at about 1000 feet elevation, which sufficiently indicates the atmosphere it requires. The whole plant seldom exceeds 6 or 8 inches in height, and frequently is not more than 4 or 5. The sterile fronds are somewhat lanceolate in outline and pinnate, with a narrow decurrent border to the rachis; the pinnae are variously forked, and resemble miniature stags' horns; fertile fronds shorter than the sterile ones and much less divided, the under side being wholly occupied by the sporangia. The peculiar structure and habit of this little *Acrostichoid* plant has been the subject of a variety of opinions amongst pteridologists. Some place it with the *Gymnogrammas*, others make it an *Osmunda*; it is, again, often referred to *Polybotrya*, &c.; but as far as I can judge it does not seem to agree comfortably with any of them. It is peculiar to St. Helena.

**M. FURCATA**, known also by the name of *Acrostichum dimorphum*, is another curious and highly interesting plant, very nearly allied to the previously named species; indeed by some it is considered identical, but it certainly appeared distinct to me the only time I saw it introduced in a living state. It grows to about the same height as *M. bifurcata*. The barren fronds are oblong or oblong-lanceolate in outline, pinnatifid or deeply lobed, and light green in colour. The fertile fronds I have never seen. It has hitherto only been found near the top of the celebrated Diana's Mount.

**ACONIOPTERIS SUBDIAPHANA.**—A simple-fronded plant, which would be an *Elaphoglossum*, but it has the apices of the other-

wise free veins joined to a continuous marginal vein. Fronds about a foot long and upwards of an inch wide, simple and entire in outline, lanceolate, and dark green. Stipes and crown of plant clothed with numerous light brown chaffy scales. It grows upon the stems and branches of trees naturally, but thrives very well under pot culture. It is peculiar to the island.

**ELAPHOGLOSSUM CONFORME** (fig. 1).—A simple-fronded plant with free veins, somewhat abundant in cultivation, and not peculiar to this historical little place. On the contrary, it has a very wide geographical range, and consequently is extremely variable. The fronds are usually from 6 to 12 inches long and nearly an inch wide, coriaceous in texture, and bright green.

**PTERIS PALEACEA.**—A fine bold-growing species, which will be acceptable in large cool ferneries, but it is not a plant for amateurs. In but limited space it grows 3 or 4 feet high, or even more, resembling a gigantic form of *P. quadrisaurita*, but having stipes and rachis clothed with large dark-coloured chaffy scales. It is peculiar to the island.

**P. FLABELLATA.**—The plant which bears this name resembles in every respect the well-known *P. arguta*, which well deserves a place in every large cool-house fernery.

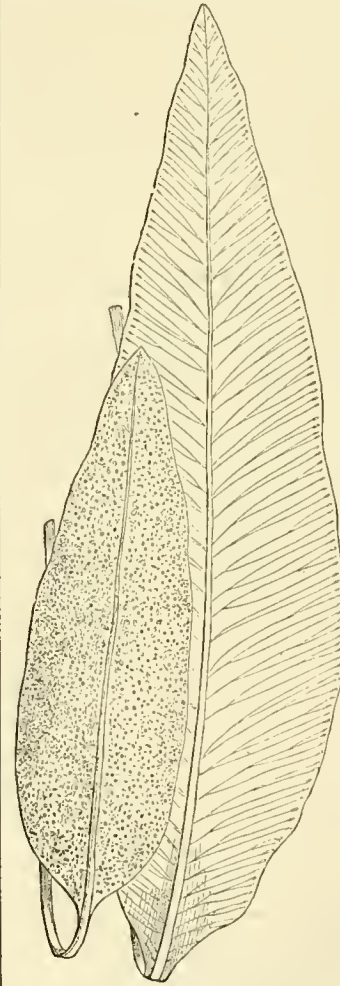


Fig. 1.—*Elaphoglossum conforme*. Barren and fertile fronds medium size.

The form bearing the name of *flabellata* does not, however, withstand uninjured a very low temperature.

*OPHIOGLOSSUM VULGATUM*.—This common British species (*fig. 2*), is too well known to need description here, and is only named as it is found upon this island.

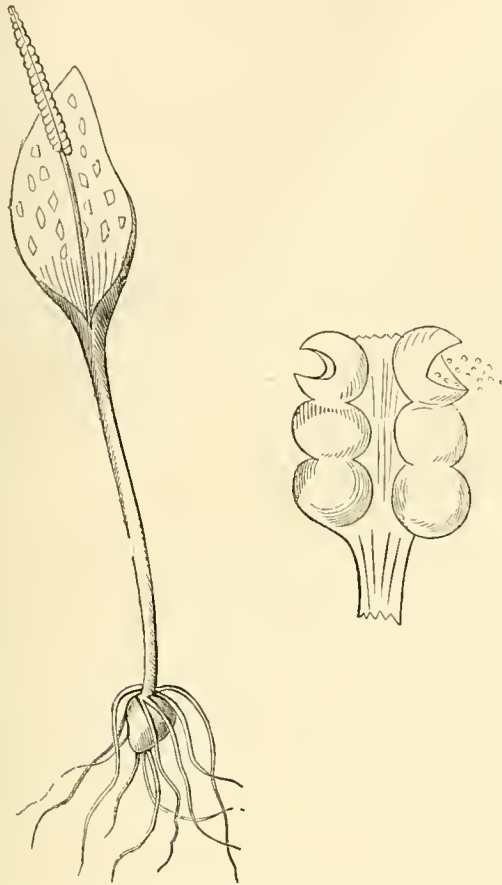


Fig. 2.—*Ophioglossum vulgatum*.

The above enumeration comprises all the Ferns I can find to be natives of St. Helena. If any of the readers of our Journal can give me further information on the subject I shall be most grateful.—EXPERTO CREDE.

#### METROPOLITAN FLORAL SOCIETY.

I AM happy to be able to announce that arrangements have been completed with the Directors of the Alexandra Park, by which an autumn exhibition will be held there on August 22nd and 24th, as indeed it would have been last year but for the disastrous fire. Our schedule is a very liberal one—upwards of £160, and while it is mainly the object of the Society to encourage amateurs, ample scope is given for all exhibitors. There will be no entrance fee, as has heretofore been the case, but we look for an increase of subscriptions to enable us to carry out our plans. Our Society becomes more than ever necessary; for now the Royal Horticultural Society does not hold an exhibition at all in August, nor the Crystal Palace, consequently growers of Hollyhocks and Gladioluses in the southern counties would have no place to exhibit them were it not for our exhibition; while the prizes offered for Dahlias at the Royal Horticultural Society give little encouragement to the growers of that fine flower. We therefore, in face of the rising tide of taste for florists' flowers, confidently appeal to horticulturists to give us their aid, and hope to be borne rapidly on the "flood that leads to fortune."—D., Deal.

GENERAL MEETINGS OF THE ROYAL HORTICULTURAL SOCIETY were held on the 13th and 27th of May for the election of Fellows, &c., when the following candidates were elected—viz., Mrs. Bald, H. Benjamin, M. H. Benjamin, Oswald Bloxsome, Mrs. Alexandré Cassavetti, Lady Duke, William

James Ford, Mrs. George B. C. Laverson, Sampson S. Lloyd, M.P., Henry D. Macaulay, William Humphrey Ransford, Lewis R. Starkey, M.P., Edward L. Walker, Mrs. Walker, Mrs. Forbes Winslow, Earl of Aberdeen, Thomas George Barclay, Frederick Campion, George Dunlop, Lady Clayton East, J. Caven Fox, Mrs. Grimwood, James Innes, Charles T. Ritchie, M.P., Mrs. Jacob C. Rogers, &c.

#### THE PEAR PARADISE STOCK.

THE name of the Pear Paradise will strike most people as being something novel in fruit-culture. What has been wanted so long is a stock of the same nature as the Pear, which would effect the same results upon it as the Apple Paradise does upon the Apple, and this has been to some extent obtained by M. Miro, of Meaux, near Paris. He says in a communication sent to a French contemporary:—

"In a course of arboriculture which M. Baudinat and I gave in the garden of M. Messenger, member of the Horticultural Society of Meaux, after speaking of the effects of various stocks on different fruit trees, some of our audience remarked on the ingenuity of making a Pear Paradise stock. I made no pretence of having found a Paradise, but a sort of intermediate, which shall be the subject of this communication. The suckers of the Pear stock grow less vigorously than the parent, and are therefore in this respect between the Pear and the Quince. They make excellent pyramids, and fruit quickly, and they have the advantage over the Quince of prospering in all soils by reason of their rooting near the surface.

"In 1863 I bought two hundred plants of suckers which I planted in my garden. I grafted almost all in July of the same year. I made a plantation of them in very bad dry soil, despairing of the success of this plantation. Since that time till 1871 I had not seen these trees, when I was agreeably surprised at their moderate vegetation, which was very green and less strong than the trees on the Pear stock, and they were so heavily laden with fruit as to require to be thinned. This proved to me that stocks from suckers of the Pear are well adapted to make garden trees, while trees on the Pear stock are only fit for orchards."

This is an experiment which anyone can try. Procure in autumn, when the leaves have fallen, a number of suckers from small-sized Pear trees in an orchard or garden. Choose those that appear to be the most delicate growers. Run them out in lines, and when established graft them with any kinds of Pears which are desired, and no doubt the result will be equally satisfactory as M. Miro found his experiment to be.

#### A FEW HINTS ON SUMMER BEDDING.

By the time this appears in print, most gardeners will have made up their minds as to the way in which the flower beds and borders under their care will be planted this year with their summer and autumn occupants. In all well-ordered gardens this matter is decided a considerable time beforehand, and the number of the different varieties of plants required to complete the arrangement ascertained, for the purpose of getting them ready in good time, so that they may be properly hardened and in good condition when planting-out time comes round. This plan has much to recommend it, and adhering to it will prevent mistakes in the distribution of the plants, and cause the work to get on more expeditiously at the time of planting. But although the plan of deciding beforehand the position that each kind of plant shall occupy in individual or groups of beds is the right way to proceed, it is not in all instances carried out. And possibly there are some readers of this Journal who up to the present time have not fixed upon any particular style of arrangement as regards the distribution of the various kinds of flowering plants in the beds or borders for this year. If there are such, no time should be lost in deciding upon a bedding-out plan; but before doing so, the stock of bedding plants should be gone over and counted, noting down the correct number and condition as regards health of each variety. Having got a list of the different varieties of plants on hand, and the correct number of each kind, with a plan of the beds or borders to be filled, having the correct size of each bed marked thereon—the work of arranging how the plants are to be distributed in the beds can be done in a shorter time, and with a certainty of more satisfactory results, than if left until the hurry of planting-time comes.

I need not tell the majority of gardeners that the success of bedding plants, after being planted out, depends very much on

two things—that is, the previous preparation which the beds have received, and the freedom of the plants from insect life at the time they are transferred to the beds. In the case of *Verbenas* and *Calceolarias* it is useless to expect satisfactory results unless the plants are clean and healthy at planting-time, and the staple of the bed in which they are planted in a rich and sweet condition.

In a general way, and having regard to the greater number of the different sorts of bedding plants, all manurial dressings of a solid description are best applied to flower beds during the winter months, the object in view being to produce a steady growth in the plants without causing an overluxuriance of foliage. In the case of the *Verbena* and *Calceolaria*, however, I find the best time to apply manure to beds of which they are intended to be the chief occupants is a short time before planting them, and in the following way:—The soil is removed from the surface of the beds to a depth of 7 or 8 inches, and the bottom forked-over with a digging fork; then a layer of good rotten manure, about 4 inches thick, is spread over this, and beaten level and firm with the back of the fork or spade; after which as much of the surface soil as is necessary to bring the bed up to the right level is spread over the manure.

On the first fine day, or as soon after as the surface is dry, the beds are trodden rather firmly with the feet, and afterwards gone over with a Dutch hoe to take the feet-marks out. They are then ready for the plants, and I have found the two plants in question do very well in beds prepared in this way.

All flower beds not occupied with spring flowers should be forked-over twice or thrice. This operation tends to sweeten and warm the soil, making it in a more fit condition to receive the plants, and to sustain them in a healthy state afterwards. —J. HAMMOND (in *The Gardener*).

### ALTERNANTHERAS IN THE NORTH.

In answer to Mr. Luckhurst's inquiries about the success of the *Alternantheras* and *Colens* in the north, I can state that an amateur in this neighbourhood (valley of the Derwent, North Durham), whose admiration of carpet bedding was awakened by a visit to Mr. Cannell's establishment at Woolwich three years ago, has succeeded in growing *Alternanthera* amena very fairly in a bed in front of his residence; and a very pretty effect it has with *Golden Feather Pyrethrum*, together with *Echeverias*, *Sempervivums*, and other succulents. The worst of it is, they make so little growth after they are put out that they have to be good plants to begin with, and put in close together to insure success. This, together with the fact that they are somewhat difficult to winter, tends much to limit their cultivation in the north. The *Alternantheras* are certainly very pretty and deserve all the attention they require; and anyone having a stove need have no fear of wintering them and getting up a stock in spring, for they can be propagated freely and grow luxuriantly in moist heat. —R. INGLIS.

### FRUIT PROSPECTS.

In answer to "F. P. G.'s" inquiry as to fruit prospects in other parts of England, I have the pleasure to inform him that here (Diss) in Norfolk, we have a most abundant bloom of Apples and Pears, which seem to be setting well in spite of hard frosts and continued drought (not rain enough to lay the dust for more than six weeks); and I hear the same account from Cambridge and Bedfordshire. —DUCKWING.

I AM glad to say that the blossom on the Apple trees here (South Yorkshire) has been most abundant. My standards have done well, and espaliers better; but my pyramids, from within a foot of the ground to their tops, 10 feet high, have been a sight worth coming to see, and the same may be said of the Pear trees, with the exception that the Pear trees trained on wire as espaliers have exceeded anything I had believed possible. I shall have a good crop of Apricots, very few Plums, and no Peaches and Nectarines, both the latter having been full of blossom, but ruined by blight. Strawberries will be a good crop, but not equal to last year.

The frosts have been very severe, and have prevented some of the late Apples from setting so much fruit as they should have done; and most people have had their Potatoes ruined. I have saved mine, and expect an early and good crop. My Sutton's Red-skins are only just appearing, as they were put in late; but I planted *Mona's Pride*, *Sandringham*, *Myatt's*

*Prolific*, and *Lapstone* early in March. They showed all at once in the warm weather before the frosts. I hoed them at once, and kept covering them every night with the hoe until they could no longer be so covered; then I filled the trenches with wheat straw, and every evening at sunset, if there was a chance of frost, drew the straw over the tops with a rake, removing it about nine o'clock next morning. Notwithstanding this, some of the leaves were injured on two nights, but not sufficiently to do any harm. The straw is now removed to the Strawberry beds, and will finally go into the ground. I saved my crop last year in the same way. —J. F. W.

### HARDY TERRESTRIAL ORCHIDS.

#### ORCHIS MAScula AS A POT PLANT.

One of the most interesting and attractive features for the last two or three years at the spring shows at the Regent's Park and South Kensington has undoubtedly been the small but charming groups of hardy terrestrial British and south European Orchids sent from York House, Twickenham, by H.R.H. the Comte de Paris. His Royal Highness is not alone an enthusiastic admirer, but in every way intimately acquainted with these singularly interesting wildings, and possesses perhaps the most varied and successfully cultivated collection of them to be found in Britain, or, indeed, anywhere else. We should like to see many others imbued with a similarly refined taste, and take up the cultivation of these little gems. It is not so difficult a matter as many seem to think; and as most horticultural journals have recorded the details of the very successful mode of cultivation practised by Mr. Needle, gardener to H.R.H., none who may try to grow them need go blindly to work.

We are led to allude to the cultivation of these interesting little plants on the present occasion by a letter just received from a friend in county Cork. Some two years since, about this time of year, happening to be in that part of the world, we all at his residence, charmingly situated on the "pleasant waters of the river Lee," and were particularly taken with a very novel feature in his garden—namely, an oblong bed of *Orchis mascula* in full flower. It was effective and striking as it was novel, and, except as regards sameness of colour, its appearance was quite that of a bed of *Hyacintha*, and just as telling.

Now, with regard to the behaviour of this most familiar of our wild Orchises as a pot plant. In the letter above alluded to our friend incidentally alludes to it thus:—"I had really wonderful value this spring with *Orchis mascula* in pots. Some of them have three and four spikes, fully 12 inches high. They are better than *Hyacinths*, and remain three times as long in flower; they are about the most easily managed things I know of." Is not this encouraging? And how many more even finer subjects have we at our doors, the cultivation of which would be equally easy?—as, for instance, the fragrant *Gymnadenia conopsea*, with its tall purple spikes; *Orchis latifolia*, in its varied forms; *O. morio*, the Bee Orchis; *Listera ovata*, the white *Habenarias*, &c., all of which we have reason to know are capable of being wonderfully developed under cultivation. —(*Irish Farmer's Gazette*.)

### ALEXANDRA PALACE AND PARK, MUSWELL HILL.

HAVING had occasion in my capacity as Honorary Secretary of the Metropolitan Floral Society to visit the Alexandra Park, I have thought that perhaps a few notes concerning it might be acceptable; for its past history is not without interest to horticulturists, and I would fain hope that its future may be of greater interest still. One's memory goes back not only to the Show which was held there at its opening last year—a show of the grandeur of which it would be impossible to speak too highly—but to one of an older date, when plants kept pouring in, and tent after tent had to be added, and when the fineness of the day, the grand scenery of the park, and the prospect from the high ground it occupies made it, in connection with the splendid collections of plants, a day long to be remembered by all who were present. The Exhibition of last year was so fully reported in the Journal that there is no need to do more than to refer to it, as one in which the liberality of the Directors was amply rewarded by the excellence and variety of the exhibits.

It might have been thought that the terrible fire which levelled the building with the ground so soon after its opening would have utterly destroyed the hopes of those who had any

interest in it; and it was noted at the time as a wonderful example of British pluck, that at the very time when the Directors were gazing on their ruined building, they then and there determined to rebuild it. The result of that determination is now being seen, and in another month's time the Directors confidently hope to re-open it. The plan has been altered, there will be no dome and no galleries; the space covered by the building, however, will be larger than ever, and four water towers, with tanks 30 feet square, flanking it at each corner, will afford an abundant supply of water in case of fire.

It should be known to all who care for such matters, that Alexandra Park is very unlike the grounds of the Crystal Palace; that is more of a garden, this, as its name implies, more of a park. There will be none of those grand attempts at bedding-out which have made the grounds at Sydenham a place to study the effect of colour and the value of various plants; but the grounds at Muswell Hill will be equally instructive, as showing how effects may be produced by trees and shrubs, while the undulating character of the ground, and the shady nooks and corners, will make it, I doubt not, a favourite resort for picnics. It may give some idea of the manner in which the Directors are carrying out their plans, and how little they regard expense, if I refer to what I believe will be one of the most instructive parts of the grounds—the Japanese village and garden. It is situated at the upper part of the park, near the railway station, and consists of three or four cottages, a joss house, garden, &c., and everything in connection with it is Japanese. The day that I was there I saw a number of bags, just delivered from the railway trucks, containing the small round stones used for paving courtyards. On examining them I found them to be of a curious kind of stone, and was informed by Mr. McKenzie that they, too, had been brought from Japan! The wood of which the cottages are built is that of the *Cryptomeria japonica*, and it strikes me as very beautiful, and likely to be very useful where polished and varnished deal is now used. The grain is very beautiful, and the wood seems durable. The village stands in the midst of grounds laid out by a Japanese landscape gardener. There is the little mound, the bridge, the stream with which we are familiar on the Chinese and Japanese plates and dishes;—we seem only to want the Weeping Willow tree to make it complete. All this has been carried out by workmen from Japan, and I believe it is intended that these houses should form a sort of emporium, where the very beautiful products of Japanese manufacture shall be sold by Japanese trademen. We shall thus have quite a Japanese colony located in this part of the grounds.

All who know anything of Mr. McKenzie will readily believe that in his department of the Palace everything will be carried out in correct style, and an inspection of the range of houses where he has his plants will at once testify to this. I have seldom seen a more compact and thoroughly efficient set of buildings, and all the plants in them were in a most thriving condition; and as a large and handsome conservatory will form part of the building, we may expect to see a permanent collection of fine plants; while out of doors there will be sufficient bedding-out to give brightness to the gardens. There is one cherished project that Mr. McKenzie would like to see fulfilled, and that is the establishment of a school of horticulture, which he would be so well able to preside over, and for which he would like to allocate a portion of the ground admirably suited for the purpose. There can be little doubt of the desirableness of such a scheme, and we may hope some day to see it realised.

There can be but one wish—that the Alexandra Palace and Park may ultimately be a success. I believe there is no undertaking in which Sir John Kelk has been engaged in which he takes so deep an interest. The property is now in the hands of a few wealthy capitalists; they have surrounded themselves with an efficient staff—Sir Edward Lee, who won such universal goodwill at Dublin when he presided over the Exhibition there; Mr. Embden, who was his Secretary; Dr. Dresser, whose taste in art is well known to all; and Mr. McKenzie, form a staff which commands every element of success. There is ample room for both the Alexandra Park and the Crystal Palace, and the inhabitants of the north side of London will have placed within their reach an attraction similar to that now enjoyed by the southern side of our great metropolis.—*D., Deal.*

FUNGI AS AN ARTICLE OF COMMERCE.—Throughout the continent of Europe, plants of this tribe are eagerly sought

after by all classes of men, and form the chief, if not the sole, diet of thousands who would otherwise be but scantily provided with aliment. But Fungi are not only the tolerated food of the poorer classes, they are also highly prized by the rich man and the epicure. In Italy and Germany immense numbers of the various species of this tribe are sold in the markets, and produce an almost incredible amount of income. In Rome, so important are the Fungi as an article of commerce, that there is a public officer appointed to test the species exposed for sale, and superintend this branch of the revenue; for in that market a tax is laid on all quantities of Fungi presented for sale exceeding 10 lbs. in weight. All Fungi brought into Rome are supervised by this officer, weighed, sealed-up, and all destined for that day's consumption sent to a central dépôt. If, among the contents of the baskets offered any stale, maggot-eaten, or dangerous specimens are found, they are sent under escort, and thrown into the Tiber; and another remarkable circumstance is the law that if any specimen of our edible Mushroom (*Agaricus campestris*), is found, it also is to be thrown into the river! So says an unpublished letter of Professor Sanguinetti, "Ispettore del Funghi" at Rome. It is certainly singular that the only Fungus which is freely accepted in all English kitchens, and considered as the sole common kind that is honest and trustworthy, and possessed of no murderous properties, should be the one thus protested against, whether in a state good or bad!—(From "Casell's Popular Educator" for June.)

### ROYAL GARDENS, KEW.

In the herbaceous ground the *Rheum officinale*, *Baillon*, is in flower, which from a scientific point of view, so long as it remains in bloom, will perhaps be the most important plant in the garden. It is the first time in England that botanists have been able to examine the flowers on the living plant. In Dr. Hooker's "Le Maout and Decaisne," we are given the information that "the botanical history of the *Rhubarb* is obscure. In the tenth century the Arabs received it from the Chinese, and spread it through Europe; but the Chinese only vaguely indicated its habitat, and botanists have long doubted to what species it belongs." In notes by Dr. Hooker we are further informed that *Rheum Rapaonticum* "furnishes the English medicinal *Rhubarb*, and is extensively grown both as a substitute for the Oriental and also to adulterate it. Within the last two [now about seven] years the true *Rhubarb* plant has been introduced into France by the Chinese missionaries in East Tibet, and named *R. officinale*, *Baillon*." It is quite distinct from every known species of *Rheum*, and conspicuously by the thick dwarf stem developed above ground, which is the part used in medicine. It is hardy and decidedly ornamental, but, from its early growth and liability to be disfigured by spring frosts, will not perhaps be largely used as a decorative plant, requiring even more care than the *Gunnera*.

Among the plants of beauty in this department are *Polygonum alpinum* (*P. polymorphum*), a species of good habit, with an inflorescence much like that of *Spiraea japonica*; *Omphalodes liniflora*, a dwarf white-flowered annual with glaucous foliage; *Onosma taurica*, indispensable to every collection; *Achillea umbellata*, good for its dense white foliage, but here very pretty in flower; *Hemerocallis Dumortieri*, nearly resembling *H. minor*, but the flower is of darker colour and the foliage less flaccid, it is the better of the two, though far less frequently met with; *Delphinium triste*, more curious than beautiful, and for which a more suitable name could not be found—the flower is almost black, slightly shaded with dingy yellow. Lovers of the genus *Iris* will find much to admire. *Iris* (*Xiphion*) *lusitanica*, a golden self, is now in great beauty; others in flower are *I. variegata*, *I. neglecta*, *I. flavescescens*, *I. pallida*, *I. squalens*, and *I. sibirica*. They are known under a variety of names, but the last mentioned may always be distinguished by its hollow flower stems; it varies in colour from a dirty white to a deep blue. On the adjacent wall, worthy of note, are the white-flowered Himalayan *Rosa sericea*, interesting on account of its flowers with four petals, five and even more are sometimes to be found; the Mexican *Habrothamnus corymbosus*, bearing a profusion of red flowers; and the light yellow *Lupinus arboreus*. Near the Orchid house *Buddlea globosa* forms a conspicuous object. It is unique as regards the globular heads of orange-coloured flowers, is liable to be cut down in severe winter, but a rapid grower; so when killed plant again. It was formerly referred to *Scrophulariaceae*, but now with greater propriety to *Loganiaceae*.

In the Orchid collection in flower are *Enlophia scripta*; *Pleurothallis longissima*, with gracefully bending racemes of small yellow flowers; *Dendrobium Pierardi*, *Brassia verrucosa*, *Oncidium bifolium*, *Epidendrum aromaticum*, *E. virens*, *Cattleya Acklandiae* and *C. tabula*, *Dendrobium infundibulum*, *D. secundum*, a curious species, the flowers of which are small and closely arranged on the upper side of the axis, they are pink, the lip tipped with orange; and the curious green-flowered *Aceranthus arachnitis*.

Then to the rockwork. *Cyclobothra pulchella* first claims attention; it is a dwarf bulb with yellow drooping flowers, the "Golden Star Tulip of California;" the curious *Scilla serotina*, with long racemes of chocolate-coloured flowers; *Saxifraga Willkomiana*, very distinct and beautiful; *Myosotis rupicola*, one of our most elegant alpine British plants; and *Sedum obtusatum*, with yellow flowers, from North America, a fine species, which I do not remember having seen out of Kew.

In the house No. 1 is in flower the *Napoleona imperialis*, named after the first Emperor Napoleon. It would be desirable if only for the glossy evergreen foliage, but when studded with its maroon and cream-coloured flowers is at once curious and beautiful. Each flower somewhat resembles a *Raflesia* in miniature, and I do not think it too fanciful to compare it with *Sea Anemones*. The flowers are borne on the old as well as the young wood, and as there are buds in different stages it will remain in flower some time. The structure is very anomalous and curious, and from the absence of good material was long a puzzle to botanists. With the genus *Asteranthos*, not in cultivation, it was constituted the order *Napoleonææ*, which is now placed in the order *Myrtaceæ* as a sub-tribe in the "Genera Plantarum." It requires the usual stove treatment, with the lowest winter temperature—about 55° Fahr. A few feet to the right *Theophrasta Jussieu* is in flower; the comparatively short racemes are low down among the long leaves. The colour of the corolla is a peculiar combination of yellow and violet black. Bread is prepared from the seed in St. Domingo. On the lawn in front of this house the three plants of *Chamærops Fortunei* are each showing several inflorescences.

On the African shelf in the Palm house there is a plant of *Sium helenium* (*Angelica bracteata*) from St. Helena. The white flowers are pretty. It is, however, chiefly of botanical interest. It "is another instance of the curious fact that herbaceous plants are often represented by frutescent or arborescent allies in insular localities. The stems are eaten raw under the name of *Jellico*."—(Dr. Hooker, "*Icône Plantarum*.") Opposite the door, at the south end, a fine appearance is presented by the numerous flowers of *Mesembryanthemum spectabile*; they are of a deep rose colour, and about 2½ inches across. It is a dwarf species, and one of the best. It is here planted on a low strip of rockwork.

In the temperate house *Magnolia fuscata* is producing its deliciously Melon-scented flowers.

#### MR. W. PAUL'S ROSES AT THE CRYSTAL PALACE.

In reply to the remarks of your correspondent, "A. C.," permit me to say that my new *Rosea* Peach Blossom, Diana, and St. George were exhibited for several days during my Rose Show at the Crystal Palace, and received the encomiums of many visitors as well as of the press, both horticultural and general. I am sure that your correspondent will see on reflection that a new and scarce Rose can hardly be expected to be present every day over so long a period. It is also my custom to change many of the varieties twice during the exhibition, in order that as many as possible of the good *Rosea* may be represented. If your correspondent had visited the Show on the days when Peach Blossom, Diana, and St. George were present I have no doubt, from his keen and just appreciation of many other novelties, that these would have commanded his praise. I differ from him only in respect to Firebrand; this novelty is fairly solid, and has the smoothest and best-shaped petal, and the most perfect outline of any Rose I know. Your correspondent seems to have been unfortunate in overlooking Star of Waltham, which, in my judgment, taken altogether, was the finest Rose in the Show.—W. PAUL, *Paul's Nurseries, Waltham Cross*.

THE WEeping SOPHORA OF JAPAN.—One of the most beautiful of all weeping trees is *Sophora japonica pendula*. When well developed, it is attractive in winter or summer. It is more

picturesque in outline than the Weeping Willow, while the shoots hang most gracefully. It is rather a slow grower, its only fault. Like the normal form, it would thrive well on dry soil.

#### ROYAL HORTICULTURAL SOCIETY.

We remind our readers that the Great Summer Show will be held this day and to-morrow (Friday) at the Gardens at South Kensington. There are no less than sixty-six classes for flowers and fruit, and of both we anticipate a large and excellent display, in addition to which there will be the great attraction of Mr. A. Waterer's *Rhododendron* Show. Owing to the opening day of the Exhibition having been shifted from the usual one of Wednesday to Thursday, in order not to clash with other fixtures of the week, we are under the necessity of deferring until our next issue the full report which we should otherwise have given.

#### OMPHALODES VERNA.

This fine old plant has been a favourite with me from boyhood, and I was glad to see Mr. Record's notice of it. It is worthy of his highest praise, for many are its merits. It requires no special culture, thriving in ordinary soil equally out in the full bright sunshine or under the shade of trees. Once planted there is very little danger of losing it, for its spreading habit and the freedom with which its offsets or side growths are produced have procured for it the title of the Creeping Forget-me-not, small plants becoming clumps a foot or more in diameter in a couple of years. Such a lovely plant is in its right place wherever flowers will grow. It is one of the best of early-flowering plants for the rock garden. It proves an admirable associate for the Lily of the Valley under the shade of overhanging branches, along the sides of wild wilderness walks, the intense blue trusses of the *Omphalodes* and the pure white Lily bells forming together such a bouquet as will bear the palm from the choicest exotics. Clumps of it, too, tell well in vacant spaces among shrubs or to fringe the margins of *Rhododendrons*. In the spring garden it is equally effective, but it is found to answer best for mixed beds, its flowers usually fading by the end of April. Another especial merit must not be overlooked, and that is the facility with which it may be forced into flower in the depth of winter, and thus again be brought into contact with the Lily of the Valley in the conservatory.—EDWARD LUCKHURST.

#### NOTES ON VILLA AND SUBURBAN GARDENING.

*Cockscombs and Balsams*.—As the season is fast approaching when it will be necessary to thin the greenhouse of its customary inhabitants, it will be worth while to inquire how you are to render it interesting during the summer and autumn months, nothing looking worse than a house intended for keeping plants, destitute of them and filled with lumber during a period of the year when the rest of the domain is clothed in its richest loveliness. Many will have sown and potted-off a quantity of those old-fashioned but truly beautiful plants, *Cockscombs* and *Balsams*. Those who previously had not much pit or frame room to spare will find this a very suitable time to perform the operation of sowing, so far as late summer and autumn blooming are concerned. The *Cockscomb* plants, as soon as they can be conveniently handled, may be pricked-out a few inches apart round the edge of a 6-inch pot, or they may be put singly into the smallest pots, and kept there until the incipient *Cockscombs* make their appearance, from the form of which you will be enabled to judge whether certain plants are likely to produce fine specimens or not. To secure that object, after fixing upon those you mean to retain, the plants must be repeatedly shifted as they grow and always kept near the glass, in order that the stems may be short and stubby, and well supplied with large leaves hanging over the surface of the pot. They like a little bottom heat until they are nearly full-grown, when they will ornament for a long period the stage of the greenhouse. A friable loam enriched with dried lumpy parts of decomposed dung, mixed with a little silver sand, answers well for their cultivation; manure water may be given or not, just as your compost is deficient of or supplied with dung.

*Balsams* may be treated in a similar manner, with the exception that they do not, after the first potting, require any assistance from a frame, and will grow freely in the greenhouse; the chief thing to be attended to in their management being shifting repeatedly before their roots become matted, using compost of a richer nature than that employed for the *Cockscomb*, equal portions of lumpy loam and two-year-old cow dung answering well. Pick off the flowers until the

plants have attained a good size, allow them abundance of water, give them plenty of air to keep them stubby and well supplied with branches, and syringe them towards evening to keep them clean. If you succeed in obtaining stems at the surface of the pot in thickness more like your wrist than your finger, and well clustered with double flowers, you will have obtained floricultural objects than which few things are more strikingly beautiful, or which in such a short time will better reward you for your labour. Transplanted out of doors in the end of May, either singly or in groups, they will ornament the flower garden until cut down by frost, and possess a vigour and stubbiness of growth rarely combined when grown under glass.

*Russian, Double Blue, Tree, and Neapolitan Violets.*—There are few of our fair friends to whom a small bouquet of these sweet-scented flowers is not an agreeable acquisition during the cold months of winter and the milder days of spring. Unlike their near neighbour the Heartsease, which is frequently very odiferous as well as strikingly beautiful from the variety and harmonious combination of its colours, the delightful Violet, like the night-smelling Stock, presents but small claims upon our admiration, so far as our organs of vision are concerned, and, like many other objects of real worth and usefulness, it would be passed by unnoticed in the throng did not its effects and its powers to please become impressed upon our senses and sympathies in a way not to be mistaken. The Russian Violet is as hardly as our common one that cheers with its perfume our banks and hedgerows in the spring; the flowers are much the same in size, and single; the foliage is larger and more luxuriant, and it blooms rather more profusely and at an earlier period of the season. It, as well as the others I have mentioned, will flourish in rather a stiff soil, provided there be plenty of drainage and no stagnant water about the roots. If planted in light sandy soil all the sorts are apt to grow too much to foliage, and to produce less of bloom. It may be plentifully propagated by seeds at an earlier period, and by dividing the shoots or by runners now. They will flower better if the rows or beds are renewed every second year. A bed planted so as to have the protection of a frame, and the addition of mate in cold weather, will yield abundantly all the winter. In mild winters, such as we have lately had, the plants will produce plentifully at the bottom of a south, east, or west wall, or below a hedge or paling with a good aspect. The Double Blue Violet delights in a deep loamy soil well drained. In such circumstances the flowers are very large and sweet; it will flourish on the same ground for years, the plants increasing in size, and producing flowers from the older and younger parts. To have them in perfection it should be fresh planted every two or three years. Except in very mild seasons very little can be done with it in winter, for though the plants may be forwarded by having a frame placed over them, they do not like anything approaching to artificial forcing, and even when obtained by extra coaxing the flowers do not seem to yield their natural odour. The Tree Violet is also a double blue, but the flower is rounder and smaller, and the foliage too is smaller than the common garden variety. I once thought they were both the same thing under different circumstances, but I find that the habits and properties of the two are rather different. It will stand a slight degree of forcing, and, if kept in pots on the front shelf of an ordinary greenhouse, it will furnish abundance of blossom during the winter months.

The Neapolitan Violet will always maintain its place as a general favourite. It does but little good when unprotected out of doors unless in very sheltered situations, and even then it will not flower well until the spring months. To grow them in a bed under glass use a pit considerably elevated above the ground, or make-up a bed for a frame in the following manner in the beginning of September:—Put down a layer of 18 inches or 2 feet of blocks of wood, faggots, brickbats, &c., which will not only insure perfect drainage, but enable you to have a little heat below your plants in winter by means of a lining. Place above this a slight hotbed of about a foot in thickness of half-decomposed dung, and then a sufficient layer of mellow maiden loam in rather a dry state. The use of the dung is to throw a little extra heat into the loam in order to cause the plants to root freely. Take-up the plants with good balls; and as you do not wish to grow them but to bloom them, place in a row across the bed just so thickly that they do not touch each other; water each row at the bottom as you proceed, and then cover-up with the dry soil, which will prevent the evaporation of moisture, and keep the atmosphere of the frame dry. To insure this more effectually, and to also prevent the ravages of slugs, &c., strew over the surface of the bed several times during the winter dry charcoal dust, burnt earth, sand, &c.; and by attending to their wants, by judicious air-giving, watering, &c., you will be well rewarded. General directions as last week.—W. KEANE.

### COLLECTING CINCHONA BARK.

THIS most valuable medicine has acquired more than even its former interest from the success attending its cultivation

in India. So great has been that success that the bark has become one of the important exports of Hindostan. The tree is the *Cinchona Calisaya*; our engraving is from a French work, and the description is from M. Figuiet's "Vegetable World."

"The mode of procuring this invaluable febrifuge is interesting, and has been recorded in the following notes. 'About the end of June, 1847,' says Mr. Weddell, 'I set out to walk to the province of Casabaya. This province is divided by the Cordilleras into two distinct regions; the one forming tablelands, the other comprehending a long series of parallel valleys. . . . These valleys furnish the greater part of the Peruvian bark. It would be difficult to give an idea of all the treasures of vegetation buried in these vast solitudes. The thirst for gold formerly peopled them, but the wilderness has resumed its empire, and the axe of the cascarillero alone breaks its silence now.

"The name of cascarillero is given to those men who cut the Peruvian bark in the woods; they are brought up to this occupation from their childhood, and instinctively, as one might say, they find their way to the centre of the forest, through almost inextricable labyrinths, as if the horizon were open before them.

"These cascarilleros do not gather the Peruvian bark for their own profit; generally they are enrolled in the service of some tradesman or small company, who send a sort of overseer to superintend their labour. Having fixed upon a portion of the forest favourable to their purpose, the party proceed to make roads to the point which is to be the centre of their operations. From this time, every part of the forest—a view of which is commanded by the new pathway—becomes provisionally the property of the party, and no other cascarilleros dare work it.

"The overseer having established his camp, proceeds to build a hangar, or wooden hut, in which he can shelter himself and store his provisions; and if their stay is likely to be prolonged, he does not hesitate to sow Maize and vegetables for the use of the party; the cascarilleros, in the meantime, wandering over the forest one by one, or in small bands, each enveloped in his poncho, with provisions for several days, and the blankets which constitute their beds. They range the forest, axe or knife in hand, to clear away the innumerable obstacles which arrest their progress at every step; for the cascarillero is exposed to dangers which often endanger his life. The forests are rarely composed entirely of *Cinchona*; but these shrubs form groups more or less numerous, scattered here and there in the depths of the forest; sometimes—and this is commonly the case—they are completely isolated. If the position be favourable, a glance at the branches, a slight display of colour peculiar to the leaves—a particular colouring of these same organs—the aspect produced by a large mass of inflorescence, reveals the branch of the *manchas*, as the Peruvians term the tree, at a great distance. In other circumstances he must content himself with an inspection of the trunk, in which the outer layer of bark—the fallen leaves, even—are sufficient to make known the neighbourhood of the object of their search. Having marked the group, they begin operations by felling the tree with the axe a little above the root, taking care, in order to lose none of the bark, to bare it at the place where the axe is to be laid; and as the thickest part is surrounded by the largest quantity of bark, and is consequently the most profitable, it is usual to dig out the earth at the foot of the trunk, so that the barking should be complete.

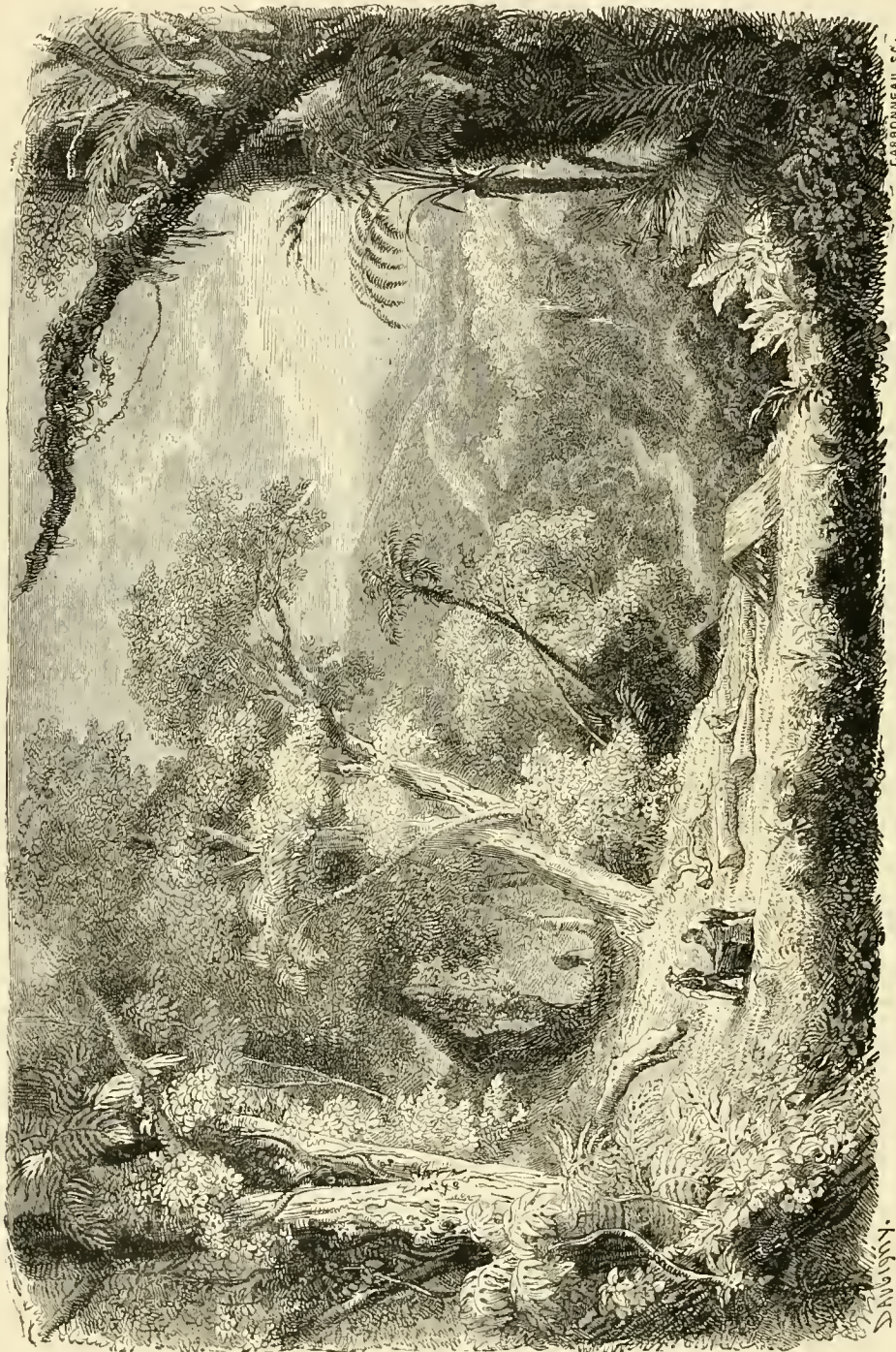
"The *Cinchona* is sometimes completely surrounded, as in a pit, with *lianes*, which shoot from tree to tree.

"I remember having cut down a large tree, hoping to get the flowers, but after having knocked down three neighbouring trees, it still remained standing, supported in that position by the *lianes*, which were wound round its branches, supporting it as if wrapped in a shroud. When, at last, the tree falls, outer bark is gathered by means of a wooden mallet, or the back of an axe. The part thus stripped is then brushed, and divided throughout by uniform incisions. The bark is separated from the trunk by means of a knife, with the point of which the surface of the wood is raised. The bark of the branches is separated much as that of the trunk. The details of dressing the bark vary a little in the two cases; in fact, the thinner plates of the bark of the branches, which make the rolled quinine, called *canuto*, are merely exposed to the sun, when they take of themselves the desired form, which is that of a hollow cylinder; but those which are the produce of the trunk, and constitute the ordinary bark, which is called *tabla*,

are subjected during the drying process to great pressure, without which they would take the shape of the others. After their first exposure to the sun, the squares are disposed one on the top of the other, just like the planks of deal in a timber-yard, and are kept level by means of heavy weights laid on the pile.

The next day the squares of bark are put back again in the sun for a short while, then back again into the press, and so on. In this state they are left at last.

“But the work of the cascarillero is not nearly finished, even when the preparation of the bark is over; his spoil has to



CARBONNEAU, S.C.

COLLECTING CINCHONA BARK.

be conveyed to the camp. With a heavy load upon his shoulder, he has to retrace the intricate paths that he traversed with difficulty without his burden. I have seen more than one district where the bark had to be carried through the wood during fifteen or twenty days—it is difficult to conceive how such labour can be properly remunerated.

“The care of packing the bark, which devolves upon the overseer, is no unimportant part of the labour. He arranges the different loads, as the cutters bring them into the camp, in parcels, which are sewn up in woollen-canvas packing.”

“In this condition the bales are transported on the backs of men, asses, or mules, to the town depôts, where they are packed

in copper, in which state they acquire a great solidity. When dry they are called *surous*, and in this condition they reach Europe. Our plate represents the harvesting of the bark of the Cinchona in the manner described in a Peruvian forest."

#### ANTHURIUM SCHERZERIANUM WILLIAMSII AND A. FLORIBUNDUM.

My acquaintance with the normal state of *A. Scherzerianum* dates back to its first days in Europe; since then I have been so much mixed-up with it in my everyday life, that I look upon it with as much interest as I should were it a child of my own, which, however, it is not, the credit of introducing it being due to my much-respected friend and correspondent, Mr. H. Wendland, now Inspector of the Royal Gardens in Hanover, and it must be highly gratifying to find oneself the introducer of such a grand plant. I was not very much enraptured at first with the *A. Scherzerianum*, for it was very small. The first spathe which opened in this country was under my care, a notice of which I sent you some eleven years ago. However, as the plants have gained strength their beauties have developed, until at the present time it stands in the front rank of ornamental stove plants, acknowledged by all to be one of the very finest subjects in cultivation, either for home decoration or exhibition purposes, whilst the fact of its lasting several months in full beauty adds materially to its value.

It was not the typical plant, however, to which I particularly wished to direct the attention of my readers when I commenced these remarks, but to a splendid companion which has been found for it in the shape of a white variety. This beautiful form is named after Mr. B. S. Williams, of the Victoria Nursery, Upper Holloway, who is offering it this season for the first time. The plant in question, in growth and habit differs in no respect from the original form, but instead of the spathe being brilliant scarlet, it is soft ivory-white with a bright lemon-coloured spadix. Indeed, this white variety will be to *A. Scherzerianum* just what the white *Lapageria* is to *L. rosea*. I should advise amateurs who do not wish to use their plants for exhibition purposes, to put the two plants into one pot, and let them intermingle their growths; the effect thus produced by the contrast of the scarlet and white spathes would become magnificent. Of course, those who exhibit their plants will grow them separately, as, indeed, will the majority of

plant-lovers; but however grown, and wherever seen, it will be a grand acquisition to our collections.

I have had the pleasure of seeing this variety in flower several times during the past twelve months; and as I find very small plants produce larger spathes than the first plants of the scarlet one did when it first flowered in this country, I feel confident that we shall in the course of a few years have these two charming plants exhibited in pairs.—*EXPERTO CREDE.*

Mr. Williams has also another new *Anthurium*, of which the spathe is also white—viz., *A. floribundum*, a species introduced by M. C. Patin from New Grenada. Mr. Williams, to

whom we are indebted for the accompanying illustration, thus describes it:—

"This is a handsome compact-growing plant, which, on account of its wonderfully profuse-blooming qualities, cannot fail to recommend itself to all lovers of plants. The leaves are alternate and somewhat lanceolate in shape, supported upon short-winged petioles; they are dark green in colour, ornamented with a central stripe of white; the flowers rise to about the same height as the leaves, the spadix being ornamented with a beautiful pure white spathe, which remains long in full beauty, and affords a splendid contrast to the rich green of its foliage."



*Anthurium floribundum.*

**PRIMULA JAPONICA SEEDS.**—I have heard many complaints of these seeds being such a length of time in vegetating. Some writers say it is twelve or

eighteen months. I sowed some seed in a pan on the 1st of May, and on the 14th there were hundreds of seedlings up.—*GEORGE BERRY, The Ferns Nursery, Ipswich.*

#### DOINGS OF THE LAST AND PRESENT WEEKS.

It would be very interesting to us if we could get the rainfall gauged three or four miles north, and the same distance south, of Ilford. In all probability there would be a difference of several inches during the year. The Thames valley and the Kentish hills on the one hand, and Epping Forest on the other, offer an attraction to the clouds. On Whit-Monday we could see rain falling in torrents, and it was pitiful to read in the papers next day of the plight of the holiday-makers on Hampstead Heath and other places, owing to the torrents of rain, but not even the hundredth part of an inch fell on our thirsty ground waiting to receive it. None has fallen as yet, and it has been necessary to commence watering in earnest. To Strawberry beds and quarters of Cauliflower plants sufficient water was given to soak the ground to a good depth—no danger of applying

too much on a light gravelly soil like ours. The days have been cloudy, so that what water was applied did not evaporate rapidly; but to save as much of this as possible, a mulching of light rotted manure was applied to the whole surface afterwards. The earliest Potatoes on the wall border had been constantly checked by cold frosty nights, and the continued drought has made bad worse; the haulm seems to have stopped growing, so that the crop will be of the poorest. Early Peas would be greatly benefited by a soaking of water; but this must not be applied with force to the base of the haulm, otherwise the plants will be injured. A good plan is to draw a drill on each side of the row, and fill it two or three times with water.

We made another sowing of *Peas*. Our plan is to sow early, medium, and late at the same time, which gives a succession. Some persons do not care to have all Marrow Peas in the summer, in which case Supreme should be included; but where Marrows are preferred, a good succession will be G. F. Wilson, Veitch's Perfection, and Omega. The last-named is one of Mr. Laxton's hybrids, and is a great acquisition; it is very distinct in character, and withal the latest Pea in cultivation. It may not be so in a year or two, as Alpha has certainly been superseded by William I., which is a hardier, earlier, and altogether a better-looking Pea. It must be obvious to all that there is no advantage in trying for very late Peas, as the longer time that the pods take to arrive at a fit state for picking, so much the longer is the ground occupied by the plants.

#### FRUIT AND FORCING HOUSES.

*Pine Apples*.—In the early fruiting house, where the supply of ripe fruit is equal to the demand, and where a number of fruits are approaching the ripening stage, the house may be kept cool and the atmosphere moderately dry. Experience has taught us that the best way, as well as the most convenient, to adopt with ripe fruit is to cut it, and hang it stalk-uppermost in a cool room, where, if well ripened, it will keep in good condition for two or three weeks. The fruit will be of excellent quality, and will keep all the better after being cut, if it is ripened in a somewhat dry atmosphere and a not-too-high night temperature. We require a much larger number of suckers this year, and are potting-up all of them as soon as they become sufficiently large. There is no need to practise, as some do, laying suckers out to dry in the house before potting them. Pot at once, the smallest suckers in 6-inch pots, and the larger in 7 and 8-inch; place them in a gentle bottom heat, but do not give any water until the second week after potting.

*Melons and Cucumbers*.—Clouds of aphides have from time to time multiplied on the Melon plants both this and last season. In all our previous experience we never had seen the Melon plants attacked so persistently. The Melon succeeds best in a clayey loam, and this we have not been able to obtain at all of the character we would like, nor have the plants been so robust in growth in the light loose loam. Under such circumstances, not only Melons but any other class of plants readily become a prey to insect pests. The fruit is now ripening, the earliest being Gilbert's Improved Victory of Bath. This sets and swells off its fruit well. Read's Scarlet-flesh promised to be the best of its class as to flavour and appearance. It was far ahead of Scarlet Gem, but with us it is the worst setter, and after the fruit has swelled as large as a duck's egg, it would drop off. Though a very large number of flowers were impregnated, only one fruit has swelled to a large size, and the plants, notwithstanding being the strongest and healthiest at first, are not so now. Scarlet Gem is a free-setting sort, and when well grown the fruit is quite large enough, but it has a tendency to crack, which is an objectionable feature. This may, however, be remedied by allowing the plants to become rather dry at the roots, airing the house freely, and having a dry atmosphere. Cucumbers are kept growing freely, and three or four plants supply us with plenty of fruit. When the plants were put out only half the border was made-up; the other portion has now been done, using a rather rich compost for this purpose. Syringing freely serves to keep them clean and in healthy growth.

*Orchard House*.—If the trees are in pots, as with us, abundant supplies of water are of the greatest importance at present. A tree that has suffered two or three times from lack of the necessary element, will do little more good that season. Trees planted out must be well attended to, but those in pots require unremitting attention. Pinching and thinning-out the young growths must now be attended to; we are careful to stop those near the top of the trees first, and those near the base a few days or a week later. It is also a great mistake to allow the growths to become crowded and then to thin them out when the wood is pretty well ripened. There must be ample room amongst the trees, otherwise the fruit will be wanting in colour and be badly flavoured.

*Strauberies* on the shelves are now ripening, and it is necessary to be careful when syringing the trees not to allow the engine to play upon the ripening fruit. Many fruits rot-off just before they ripen, owing to the damp atmosphere. All that we can do is to withhold syringing altogether on dull cold days; and even in fine weather the morning is the best time to use

the engine with a liberal hand. We have gone over the trees and thinned the fruit for the last time. With the pot trees there is no danger of the fruit dropping-off during the stoning period, and to leave more than the ultimate number will only task the energies of the trees.

#### GREENHOUSE AND CONSERVATORY.

Owing to the drying hot winds plants are no sooner in full beauty than the flowers lose their brilliant colours and fade in a day or two, and as nothing looks worse than withered flowers and decaying leaves, the plants require to be looked over twice a-week. Potted some hardwooded plants which had been allowed to become root-bound; they were well watered previously, then the sides of the balls were picked round with a pointed stick, and the fresh compost was rammed-in firmly with a wooden rammer. It is a recognised fact that certain plants succeed better some seasons than they do in others, and even some flowers of the same species may be only third-rate this year, and super-excellent in 1875. Hyacinth-growers are aware of it. The Rose, Auricula, Dahlia, and Chrysanthemum are all affected by the changing seasons. Human beings are not constituted alike, and there is quite as much distinctiveness amongst varieties of the same species of plants. A knowledge of this fact is essential to the successful cultivation of any flower or fruit. Stage Pelargoniums and Perpetual-flowering Carnations have been especially brilliant this year; the recently-introduced varieties are also richer in their markings, and more highly coloured and of superior form to those sent out some years ago.

Roses that have been kept under glass and without any forcing are now at their best. Mildew has been very troublesome to us, and very frequent dustings with flowers of sulphur have been necessary to check it. The worm that attacks the buds and tender leaves has been hand-picked, and green fly destroyed with tobacco smoke. With Roses, as with Pelargoniums, improvement in colour, form of the flowers, and habit of the plants has been more rapid than some writers on these matters lead their readers to believe. Teas and Hybrid Perpetuals are the most popular, and deservedly so. There are not yet many highly-coloured flowers of the former. One of the most distinct and beautiful, as well as free-flowering, is the new variety exhibited by Messrs. Veitch, named Duchess of Edinburgh; it is not quite crimson, but is a move in that direction, and will undoubtedly be the forerunner of brilliant-coloured Teas. Removed Hybrid Perpetuals outside when the flowers faded. Teas are best under glass, but must not be smothered with other plants.—J. DOUGLAS.

#### PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

JUNE.	JUNE
Coventry and Warwickshire..... 8	York ..... 17, 18, and 19
Bath and West of England ..... 8 to 12	Fermoy ..... 18
Leeds ..... 10, 11, and 12	Stamford ..... 23 and 24
Gloucester and Cheltenham ..... 11	Nottingham ..... 24
Royal Oxfordshire ..... 16	R.H.S. of Ireland ..... 25
Gosport ..... 17	Cambridgeshire ..... 25
Chertsey ..... 17	Thetford ..... 25
Burton-on-Trent ..... 17	Ipwich and E. of England 25 and 26
Thorne ..... 17	Kingston and Surbiton ..... 25 and 26
Jersey ..... 17	Boston ..... 30 and July 1
Guildford ..... 17	Devon and Exeter (Roses) ..... 3

#### TRADE CATALOGUE RECEIVED.

Thomas Sampson, Preston Road, Yeovil.—*Catalogue of Bedding Plants, &c.*

#### TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

DELAYS (W. Brown).—You very improperly addressed your letter, enclosing eighteen postage stamps, to Dr. Hogg instead of to "The Publisher." The consequence is it has been sent after him to Italy, and returned with a charge of 1s. for postage. All such letters ought to be addressed to "The Publisher."

**TRAINING ROSES FOR EXHIBITION (T. K.).**—They are not trained on wire in a globular form, but in the bush form with sticks leaning outwards, to which the branches are tied so as to exhibit the flowers and foliage freely.

**BUDS OF ROSE TREES FROSTED (A. J.).**—If the buds are much injured prune back by all means. Roses will stand late pruning better than is generally imagined, and it will most probably repay you to do so. All Rose buds that look flat on the top, discoloured, or unhealthy, should be cut off.

**PLANT CASES (A. G. C.).**—We know of none except those made by Mr. Gray, whose advertisement is in our Journal.

**MYOSOTIS ALPICOLA (G. S.).**—The specimen is that species.

**ROSE MISNAMED (R. Maitland).**—The Rose is not Isabella Gray, but more like La Biche, though not sufficiently tinged with flesh in the centre. If, however, on a tall standard with short growth, it might be La Biche. The foliage and shape of the bud are like it, but it is difficult to name Roses for certain without seeing them when growing.

**GRUB-BEE—PLANT (E. J. G.).**—The grub that beneath the surface of the soil gnawed and destroyed your Lobelias is called by gardeners the "Leather-jacket." It is the larva of the Daddy-longlegs, *Tipula oleracea*. The only remedy is to stir the earth 2 or 3 inches deep round each plant with a knife, and destroy the grubs thus found. The bees which have a nest near the Nectarine roots will not injure it. The plant cannot be identified without a flower being seen.

**GRAPES SCALDED (J. Mark).**—The skin of the berries is scalded—that is, injured by the sun shining on them powerfully before the dew upon them had been dried off by good ventilation.

**BOILER HEATING WATER IN SUPPLY CISTERN (Wm. A.).**—Your note, also sections, do not show so clearly as we could have wished where the supply pipe is connected with the pipes or boiler. You show two sections, and have references at foot which apply to both. In the upper section it is wrong to have 1, the air pipe, on the lowest pipe at the angle of the return, for there will not be any air there, but the air will rise to 2, where you have the supply pipe; and we do not wonder at the water boiling in the supply cistern, that being the highest point, and where the air pipe should have been, taking it up higher than the supply cistern. In the second or lower section—1, the air pipe is right, but 2 the supply pipe wrong, as it ought to have been on the return pipe as near to the boiler as practicable, and at its lowest point just before entering the boiler.

**RED SPIDER (A Constant Reader).**—This pest spins a web which is easily detected by the naked eye, and the animals may be seen actively running to and fro along the threads.

**ETHIONEMA MARMORATA (Idem).**—The *Ethionemas* are rock plants, succeeding in loam and peat with limestone intermixed, but the particular species you mention we do not know.

**RECENTLY-PLANTED VINES (J. N.).**—Having stopped at the sixth leaf two of the shoots, which we presume are trained as side shoots for spurs, they will not require further shortening until autumn, but from them will arise laterals; those from the lowest two leaves, if any, should be stopped at the first leaf, and those from all but the upper leaf rubbed off; that from the uppermost to be stopped at the first leaf, and so on for each succeeding growth. The leading shoot or cane should be taken up without stopping to the top of the house. The laterals for half way up the cane should not be stopped until the third leaf, and at the upper part of the cane stop to one leaf, and afterwards keep stopped to one leaf.

**TIGER-SPOTTED CALCEOLARIA SEED SOWING (An Amateur).**—The seed should be sown in the first fortnight of July, and placed in a cool shaded spot. The plants will flower in April and May. They are of the herbaceous section.

**REMOVING BULBS FROM BEDS (Hyacinth).**—They must not be taken up until the leaves have begun to turn yellow, and then you may take them up and lay them in a shed to dry. When dry they may be cleaned and stored away on shelves in a cool dry place until planting time. If they are green when this appears in print, you may take up the Hyacinths and Tulips, and lay them in in light soil, allowing them a moderate distance apart, but not huddling them together, and when the leaves are yellow take them up, dry, and store. The Hyacinths which have seed-pods should not be moved, but be left until those are yellow, as they will be when ripe, and should be kept in a cool dry place until September, when the seeds may be sown in a sheltered situation in light sandy soil, covering them half an inch deep with fine soil. During winter they should be protected from frost, water being given early in summer if dry. After the leaves die-down, an inch of leaf soil should be sifted over the bed, and repeat in the second year the treatment of the first. In the third year the bulbs may be taken up when the leaves turn yellow, and planted in autumn, giving them the treatment of old bulbs, but not planting deeper than 3 inches. The seedlings may flower in the fourth, fifth, or sixth year.

**AURICULAS (L. R. H.).**—The Auriculas you have sent us are "Alpines," and are good, but there are many better. Alpines are valuable for cutting, and it is a pity they are not more grown.

**LILUM AURATUM LEAVES CURLED (Idem).**—No wonder that your *Lilium* has curled, small, and unhealthy leaves, having been exposed to the cold for the past month under a wall, while it had been in a greenhouse or under other protection during the winter. We think that now the plant is taken under cover it will do better. See that it is clear of insects. Aphides are sometimes troublesome. They may be destroyed by syringing with tobacco water made of 1 oz. to half a gallon of boiling water, covered-up and allowed to stand until cold. It will need to be strained previous to use. If the leaves are dirty, clean them with a sponge and water holding 2 ozs. of soft soap to the gallon. Afford a light airy position, and water as required; good supplies are needful during growth. When it is in active growth, a month is a long time for this to go without water. Ours in a greenhouse is now in flower.

**VIOLETS OUT OF DOORS, AND LILY OF THE VALLEY (Idem).**—The Violets will not do any good unless you thin them, which we should do to 1 foot apart every way, and keep all runners cut off as they appear, giving them a dressing of short manure or rich compost, which should cover them to the neck of the plants, leaving the centre free. They should be kept clear of weeds, and watered in dry weather. Care ought to commence flowering in autumn, and continue to bloom during mild weather. We have now Mr. Lee's Victoria Regina in flower, not having been without Violets since September. If you have an east or other border of good, rich, light soil partially shaded from sun, we advise you to make a fresh plantation, but retaining the old. Select well-rooted young plants, put them in in rows a foot apart every way, leaving every fourth row out, which will give you an alley.

The ground should be manured and dug. Water well if the weather be dry, and clear-off all runners and weeds. We prefer April for planting, but the present time will do. You will have Violets in plenty next winter and spring. The Lily of the Valley may die-off in patches in consequence of its being attacked by cockchafer larvæ, for which we know of no remedy but to take them. Water well in dry weather during summer, and in November take-up the plants and put them in in clumps of about half a dozen crowns at a foot apart, covering the crowns about an inch deep with fine rich soil. The soil should be light and rich in vegetable matter, as leaf soil, and the position shaded from sun in the hottest part of the day in summer.

**MELONS SETTING (H. W. S. C.).**—To insure even-sized fruit and certain swelling, it is desirable that the required number of fruit be set as nearly as possible at the same time on each plant. When fruit set with an interval of several days between the first and last, it will be found that the first set attains the largest size, the others swelling very indifferently, and in many instances not at all, and proving at best small fruit of indifferent quality. There are some exceptions, and some kinds do better with the fruit setting at intervals of a few days than others. Read's Scarlet-flesh is one. Have the fruit set as nearly as possible at the same time.

**CANNA ROOTS WINTERING (Idem).**—Take them up after the first frost, lay them in a shed or other place upside down for a few days to dry, remove from them any soil, and store them in dry sand in a cool place, but safe from frost.

**HOLES IN THE STEMS OF STANDARD ROSES (S. C.).**—The holes, we presume, have been made by some insect, or they may be scars, both of which it would be well to close with a mixture of heeswax and pitch, as you propose. It would exclude wet, and may prevent further decay.

**ANTS ON APRICOT AND NECTARINE TREES (Old Subscriber).**—Find out their nests and runs, and sprinkle with guano, which will drive them away; ammoniacal liquor from the gsworks poured on will drive away those it does not destroy. The liquor must not be used close to the stems of the trees. For the trees you may use a mixture of quassia water and soft soap, made by boiling for two minutes 4 ozs. of quassia chips in a gallon of water, and adding to it as it cools 4 ozs. of soft soap, and with this cool and strained the trees should be thoroughly syringed in the evening of a fine day, and on the following day syringe them with water. To prevent ants passing up the fence a band of gas tar about 2 inches wide may be drawn along its base, and over this the ants will not travel. It will need to be renewed as the tar dries and loses its smell.

**ROSE TREES AND PLANTS FAILING (Amateur).**—We cannot account for the Roses and plants not growing, except by your soil containing something deleterious to vegetable life. Is the ground wet and undrained? If so, drain it efficiently. Green fly would not cause the mischief you complain of, but should be destroyed by syringing, or, if practicable, dipping the infested plants in tobacco water, the liquor of the shops diluted with six times its bulk of water. The Roses and other plants should be thoroughly wetted in every part.

**FORCING APRICOTS AND PEACHES (C. H. J.).**—After stoning both will bear a high temperature, but we do not advise this except when it is important to have the fruit ripe at the earliest possible time. The Apricots, from what you say, are not stoned but stoning. They will not swell perceptibly during that process, but after it is completed the temperature for Apricots should be from fire heat at night 55° to 60°, and by day 65° to 70°; the lower temperature in cold dull weather, and the higher in mild weather. Upon these temperatures you may allow a rise of 10° on cloudy days, but with clear intervals, and 15° to 20° or more with sun and abundance of air. Peaches, after the fruit is stoned, should have a night temperature of 60° to 65°, and a day one of 70° to 75° from fire heat, with a rise from sun heat of 10° to 15° or 20° in proportion to the brightness of the weather. If you wish to bring on the fruit as rapidly as possible, the future of the trees being considered, you may allow 5° on all the artificial temperatures named, but it is as well not to do so. Our pot Peach trees are not watered with liquid manure, but we oppress with sheep droppings, putting them on about an inch thick after the fruit is the size of small Walnuts, and adding more in three weeks or a month. We form them into a dish, which altogether may be 2 inches thick, and those two dressings are sufficient for the crop. Liquid manure may be applied, and nothing is better than one peck each of soot and sheep droppings to thirty gallons of water, given twice a week. Guano at the rate of 1 oz. to a gallon of water is also good at every alternate watering. The same liquid may be given the Vines, and thorough soakings at the same temperature and lowest, at liquid as that of the house, taking the mean of the highest and lowest, at intervals of ten days to a fortnight, the last being given when the Grapes are colouring. No liquid will make them colour well, and with your heavy crop it is hardly to be expected they will do so. Encouraging growth and having good healthy foliage will assist.

**TODEA SUPERBA (A Lady in Cheshire).**—No one could state the value without seeing the plant. If sent to Mr. Stevens, King Street, Covent Garden, when he has a plant sale, you would obtain the market price. The flower you enclosed is *Hemerocallis flava*, yellow Day-Lily.

**SEEDLING APPLE (Richard Baker).**—Your seedling Apple Wilkinson's Pippin is most excellent. The flavour even at this late season is rich and fine.

**PEACHES FROM NECTARINES (Henry Bedwell).**—It is not unusual for Peach stones to produce Nectarine trees, and Nectarine stones to produce Peach trees. This has frequently been done, and some of Mr. Rivers' finest Peaches have been raised from the stones of Nectarines. The Orange and Lemon belong to the same genus, though not, as botanists say, to the same species. We are not aware that Oranges have ever been raised from the seed of Lemons, but we know that they interbreed, and we have seen a cross between the two in which the rind of a Lemon was streaked with that of the Orange.

**HOLLYHOCK LEAF—FERTILISING CUCUMBERS (H. J. R.).**—The Hollyhock leaf is attacked by the fungus we fully illustrated last week. Pull up and burn each plant as soon as affected. You need take no trouble either to aid or prevent the fertilisation of the blossom; the fruit will be serviceable in either state; and the plants will remain bearing as long as you need them. If extreme length of fruit is desired for exhibition, non-impregnation probably is best.

**WALLFLOWER SEED (J. L.).**—Any seedsman will supply you. Sow at once.

**ENCEPHALARTOS AND TODEA (Horne Hill).**—All the species of *Encephalartos* from the Cape of Good Hope will succeed in a greenhouse, but are most luxuriant in a stove. They require a rich loam. *Todea africana* needs only a greenhouse. Turfy loam one part, and peat soil two parts, will suit it.

**GREENHOUSE ARRANGEMENTS (H. T.).**—We think you need a pit or house in which to forward plants for the greenhouse, also one for wintering bed-

ding plants; but as you do not care much about the latter they may be dispensed with. Your house, as you describe it, is not too warm for plants, and were you to dispense with them you could not do without a warmer house for forwarding plants to bloom in the greenhouse. If you put up a cooler house, and make your present one warmer, it is evident you will force things in the greenhouse. Keep this house as it is; only, if you have the forcing pit, as shown by the blue lines, and the cool house, we should take an extra pipe from the boiler along the side of the present flow in the greenhouse, and this to go along the front and one end of your proposed cool house, with a return pipe under the same. This would give you four pipes in the greenhouse and two in the cooler house; the former for plants in flower in winter should have a temperature from fire heat of 40° to 45°. From the cooler house merely exclude frost. The pipes will interfere with the doorway of the cool house, as you at present show it in front; but that might be moved or altered to the end, and corresponding or opposite to the existing greenhouse door. The forcing pit would, as you show it, answer well with sufficient piping; have two pipes for bottom heat, and two for top heat, with efficient means of regulating the temperature in all the houses by valves. It is better to have plenty of piping rather than too little, for in the latter case the water must be heated to a high temperature in order to maintain sufficient heat, and this involves a waste of fuel, and is prejudicial to the plants. The question of tenant fixture or otherwise we have not considered, but we think, with so short a lease, you ought to have an agreement with your landlord before making the proposed additions to your glass structures.

NAMES OF PLANTS (*W. H. Loxley*).—*Calycanthus fragrans*. (*F. E. T.*)—Send when in flower. (*A. C.*)—*Tecoma jasminoides*. (*W. P. B.*)—1, *Staphylea pinnata*; 2, *A. Prunus*, but specimen too far gone; 3, *Athyrium filix-femina*, var.; 4, *Cystopteris fragilis*; 5, *Quercus* sp.; 6, *Scolopendrium vulgare*. (*E. R. Maddeford*).—*Aubrietia deltoidea*. (*D. R. M.*)—Apparently a *Maxillaria*, but specimen much faded. (*W. S.*)—1, *Æschynanthus* sp.; 6, *Ophrys muscivora*; the remainder mere scraps. (*J. J. Copsey*).—The specimen enclosed, *Aloe variegata*, or Partridge-breasted *Aloe*. That you mention may be *Aloe glauca*, but it is only a guess.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### GREAT NATIONAL POULTRY SHOW.

It has been brought to the knowledge of the Committee of the Great National Poultry Show that many persons have an impression that the above Show is connected with the body calling itself the National Ornithological Association, owing to the peculiar character of their announcements, and further that none but members of the Association will be allowed to compete in future at the Crystal Palace. The Committee, therefore, find it needful to state that there is no such connection as supposed.

The Great National Show will be held at the Crystal Palace in November, it will be open to all, and it will be conducted as usual independently of every association or journal, and the Committee trust that the previous management has given such satisfaction as to commend it to the support of all interested in the culture and exhibition of poultry.—*C. HOWARD, W. J. NICHOLS, Hon. Secs.*

### HATCHING ANXIETIES.

I HAD a Dorking hen that sat on thirteen Houdan eggs in a place for sitting quite away from the roosting house. On the nineteenth day she left the nest, and though shut up could not be got on to it again. I had a black half-bred broody hen (from eggs sold me as Brahmas) which had set herself on a pot egg she found in a manger, and though the eggs were quite cold we carried them to her almost without hope. On the twenty-first day my man came to me with a chicken having some signs of life in it in each of his trousers' pockets, and he had found them thrown to a distance in the manger; another egg was broken, but a live chicken not yet got out, and the hen had deserted the remaining ten eggs. We had a Houdan hen which had been broody a month, and had constantly returned to her nest in the roosting house, though she had been removed to a place a considerable distance off. In despair we took the eggs to her, though they were again cold, and on the twenty-third day she hatched out eight more chickens, and is now going about with ten. She seems to be a very careful mother, but keeps very close to her rip.—*ELLCE.*

[Your first mistake was to set a hen in a place where it was optional with her whether she would sit fast or not. We constantly advise our readers (their name is legion) not to leave their eggs to the discretion of the hen. They are not all content with routine, and when the sun shines, and others are enjoying liberty and basking, they yield to the temptation and leave their eggs. The vitality of eggs after they are left depends on the temperature to which they are exposed, and, above all, whether the exposure is by night or by day. The fact of a Houdan being broody is curious, but there are such sports now and then. We shall be curious to know whether she remains a good mother. We gather from your query that she is at liberty with her brood. You say, "She keeps very close to her rip." Put her under it, and keep her there six weeks at least, eight are better.—*Eds.*]

ADDITIONS TO THE OXFORD POULTRY SHOW SCHEDULE.—*H.R.H. Prince Leopold* has again presented a silver cup, value

£5, for the best pen of Dorkings at our coming Show in October next. Also we propose giving prizes in several new classes, and that the value of the third prizes will be increased, and a fourth added in some of the classes that last Show had the largest number of entries. Game will be exhibited on the single-bird system. American fowls (Mr. A. Kitchen having collected a £5 5s. cup), Black Polands, Brown Red Bantams will each have a class, and there will be a Selling class for Bantams. In Pigeons Black and Dun Carriers, Dragons, and Turbits will be shown distinctly from the other colours of those three varieties. Young Barbs (1874) and Foreign and English Owls and Long-faced Tumblers will have each a class to themselves.—*JOSEPH KING.*

### EARLY-LAYING BRAHMA PULLET.

On the 22nd of January last I had hatched a brood of Dark Brahma chicks, one of the pullets of which brood laid her first egg on Saturday, May 23rd, and another on May 25th, so that when she laid her first egg she was but four months and a day old. I have kept fowls now for many years, and never before experienced an instance of such early laying.—*GEO. WARE, Tunbridge Wells.*

[We thank you for your communication. We are always looking for such, "Tis our vocation, Hal." We have long kept note of such matters. We have one record of a Buff Cochins pullet laying in the sixteenth week of her existence—we have only one. Of late years we have found pullets do not lay so early as they did formerly; and in advising correspondents as to forming relays of pullets, to make new-laid eggs certain all the year, we now allow a month more than we did formerly. We shall be glad to hear from you at any time.—*Eds.*]

### CROWLE POULTRY SHOW.

THE first attempt at a show was made at Crowle on May 26th, and as far as we can judge resulted in a great success, although the amount of money offered as prizes (not bad, however, for a start), was not such as to induce entries in great numbers; but the quality throughout was creditable to the exhibitors, and the amount of gate money (over £70), was so encouraging that there is little doubt but that the schedule will be made more tempting another year. Turner's pens were used, and having been placed against a high stone fence they were well sheltered.

The first in Dorkings were a nice even pen, the rest being of only moderate quality. In Cochins another pen was disqualified on account of stained plumage. The first in Spanish were diamonds in the rough; the second being considered by the Judges to be a little overtrimmed, and the get-up as much overdone as the first were underdone, but there is little doubt that the latter cock was the better. In Brahmas the cup for the best pen in the Show was awarded, the cock being a gem, and the pullet well marked, but far too small to look well in a show-pen. Two fair Brown Reds won in the first class for single cocks, and in the next the winners were Duckwings, the first being an exceedingly hard short-feathered bird. Game hens were shown in one class; the first a Duckwing, a perfect gem except that, as is often the case when laying, she was a little high in comb; the second being a Black Red. Hamburgs were mixed classes—a system we cannot sufficiently condemn, as it is very difficult to determine upon the rival merits of the colours, and few good exhibitors will risk the uncertainty. The winners in these classes were of fair quality. Black Reds won in both cases in Red Game Bantam cocks; and in the next class a very smart Pile was first and Duckwing second, the latter being very dirty. Of Bantams, Game, the hens were by far the best, most of them being noticed. First was a Black-breasted Red of great merit, and second a good Pile, except that she was somewhat large. In the next class Blacks won, and the first was an extremely good pen. In the Variety class the first were Golden Polands, the hen being a gem, but the cock poor. Second came a good pen of Crève-Cœurs; and a good set of Silver Polands were very highly commended.

PIGEONS.—The entries were very good, and in some classes the competition was very close. Carriers were only moderate, while Pouters were very good; Mr. Harvey's grand Blue-pied, so well known in the show-pen, standing first, with Mr. Nottage's excellent Blue a good second. Antwerps, with the exception of about two birds, were only poor, but Tumblers were very good, the winners in the latter being Almonds. White Foreign Owls of rare excellence stood in the place of honour in the next class; Blue English were second. In Barbs we were glad to see quality recognised over mere age and coarseness, a neat Red being first and Black second. Fantails moderate; a White first, and Blue second. In Jacobins a White was placed first and a Red second, the latter being somewhat large but otherwise good, although some preferred a neat Yellow to either of the above. The Variety class was the largest, and the first prize was awarded to a grand Trumpeter, the second to a neat Red Magpie cock.

RABBITS were not numerous, but the winners very good

the Lop-ears measuring well. The Silver-Greys were very good.

CAVE BIRDS were not numerous, there being only five classes, and the Goldfinches and Linnets were by far the best in quality. The prizes (only 5s. and 2s. 6d.), were not sufficient to draw birds from the aviaries of professional breeders.

DORKINGS.—1, W. Morritt, Goole. 2, J. Stott, Healey, Rochdale. *hc*, S. Brierley, Edding, Rochdale.

COCHINS.—1, H. Yardley, Birmingham. 2, J. Robinson, Garstang. *Disqualified*, Mrs. E. Allrop, Worcester.

SPANISH.—1, W. Nottage, Northampton. 2, T. C. Newbitt, Epworth.

BRAMMAS.—*Light or Dark*.—Cup and 1, W. Whiteley, Sheffield. 2, Wells and Taylor, Winterton. *hc*, J. Robinson. *c*, Mrs. E. Pryor; J. M. Atkinson, Alford. *GAME*.—*Black-breasted and other Reds*.—Cock.—1, E. Winwood, Worcester. 2, J. B. Hepworth, Hatfield. *hc*.—Harrison, Epworth. *c*, H. E. Martin, Fakenham. *Any other variety*.—Cock.—1, A. E. Martin, Fakenham. 2, J. B. Hepworth. 3, O. Barnsdall, Newark. *Any variety*.—*Hen*.—1, C. Travis, Thurgoland, Sheffield. 2, J. B. Hepworth. *hc*, Dr. Cameron; A. E. Martin; A. Canty, Barton-on-Humber.

HAMBURGS.—*Gold or Silver-spangled*.—1, J. Robinson. 2, T. C. Newbitt. *Gold or Silver-pencilled*.—1, J. Ward, Bardon Hill. 2, J. Robinson. *hc*, W. Clayton; Burch & Boulter.

GAME BANTAMS.—*Black-breasted and other Reds*.—Cock.—1, T. C. Newbitt. 2, W. A. Wressell, Crowle. 3, A. Ashley, Worcester. *hc*, J. & G. Tonge, Epworth. *Any other variety*.—Cock.—1, Mrs. E. Newbitt, Epworth. 2, R. J. Hursley, Altrincham. 3, A. Ashley. *Any variety*.—*Hen*.—1, Mrs. E. Newbitt. 2, A. Ashley. *hc*, J. & G. Tonge; Master J. Drewry, Leam.

BANTAMS.—*Any other variety not Game*.—1, R. H. Ashton, Mottram, Manchester. 2, Eurch & Boulter. *hc*, W. W. Taylor, Lincoln; J. W. Corner, Whitby.

ANY OTHER VARIETY.—1, A. Silvester, Sheffield. 2, E. Cross, Appleby. 3, R. H. Ashton. *hc*, W. Harvey. *hc*, Mrs. F. Autey, Crowle Warplings; Mrs. Hill, Fexhall, Alton.

SELLING CLASS.—1, J. B. Hepworth. 2, J. Robinson. *hc*, T. C. Newbitt. *c*, Burch & Boulter.

DUCKS.—*Muscovy*.—1 and 2, J. J. Brown, Althorpe. *Any other variety*.—1, T. Halmshaw, Earlsheaton, Dewsbury. 2, J. Robinson.

#### PIGEONS.

CARRIERS.—Cock or Hen.—1, J. E. Crofts, Blyth, Worksop. 2, H. Yardley.

POUTERS.—Cock or Hen.—1, W. Harvey. 2, W. Nottage.

ANTWERPS.—Cock or Hen.—1 and 2, J. Crossland, jun., Wakefield.

TUMBLERS.—Cock or Hen.—1, H. Yardley. 2, W. Harvey.

OWLS.—1, H. Yardley. 2, J. Crossland.

BARBS.—1, Miss F. Seaton. 2, H. Yardley.

FANTAILS.—Cock or Hen.—1, J. F. Loversidge, Newark. 2, H. Yardley.

JACOBS.—Cock or Hen.—1, A. A. Vander Meerse, 2, J. E. Crofts.

ANY OTHER VARIETY.—1, W. Harvey. 2, Miss F. Seaton, Leeds.

SELLING CLASS.—*Pair*.—1, W. Harvey. 2, H. Yardley.

#### CAGE BIRDS.

BELOIAN.—Cock.—1 and 2, G. Yates, Thorne.

NORWICH.—Cock.—1, W. Burtonshaw, Crowle. 2, Miss P. Sowersby, Rainsbut.

MULE.—*Crossed by Goldfinch or Linnet*.—1, S. Fowler.

GOLDFINCH.—Cock.—1, J. Spriggs, Ealand. 2, G. Yates, Thorne.

LINNET.—Grey.—Cock.—1, J. Nicholson, Thorne. 2, S. Fowler.

RABBITS.—*Himalayan*.—Buck or Doe.—1, W. Allison, Sheffield. 2, J. E. Crofts, Worksop. *Lop-earred*.—Buck or Doe.—1, J. Hallas, Huddersfield. 2, J. Snell. *Silver-Grey*.—Buck or Doe.—1, R. H. Glew, Wakefield. 2, J. H. Brand, Barton-on-Humber.

CATS.—1, Master F. White. 2, G. West, Ealand. 3, J. Nicholson, Thorne.

JUDGES.—*Poultry*: Mr. W. Cannon, Bradford; Mr. F. Sales, Crowle. *Pigeons, Cage Birds, Rabbits, and Cats*: Mr. E. Newbitt, Epworth.

### BEDLINGTON POULTRY AND PIGEON SHOW.

THIS Show came off on the 26th and 27th of last month, in a field at the lower end of the village. Two tents were provided for the poultry and Pigeons; and most of the Committee being true fanciers, the whole of the arrangements were carried out with the greatest precision. The Show was a great success in all respects, and the Secretary all attention.

In *Dorkings*, first and second were Dark Greys of great frame and sound feet; third pretty fair Silvers. In Pen 4, the cock had six claws on each foot. Buff *Cochins* were grand, and the cup for the first four classes was awarded to a magnificent pair of high-coloured birds, not, however, of the colour of Pen 6, which was disqualified for stained plumage. All the rest were noticed. In the next class, first and second were very fair Whites, and third Partridge. The *Brahmas* did not prove so good as expected; the first two pens, although capital birds, were not in good feather, at least the hen, which seemed to have been up for breeding too long. *Spanish* were good. The first-prize cock was very broad and smooth in face, while the second was, perhaps, a little deeper in drop, but narrow and much coarser. The birds in the third-prize pen were of fair properties. Pen 24 lost on account of a red streak over the eye of an otherwise capital cock. *Polish* were fine in all respects, and another cup was awarded. In *Game*, single cocks were poor, except the first-prize Black Red, which was an exceedingly bright stylish bird, but a little weak on his feet. Second came a fair Brown Red of dark colour, and third a bad Black Red. Single hens were very poor, but the next classes contained some good birds, the first prize and cup going to capital Lemon-backed Brown Reds, the second-prize Brown Reds pressing very closely. The third prize went to Black-breasted Reds. Duckwings won the three prizes in the next class. First, a nice even pen of well-coloured birds. In the Variety class Piles were the winners, but except the first-prize cock, which was not large, they were only of moderate quality. *Hamburgs* were good throughout, the Silver-pencilled, however, taking the lead; next in point of merit were the Silver-spangled.

It is seldom that we find classes for *Guinea Fowl*, and we

never saw better birds than were exhibited, both as regards size and accuracy of marking.

In the Variety class were a good old pen of Black *Hamburgs* first, a pen of good Malays dropping into the second position solely owing to want of condition.

In *Bantams* the competition was severe, and little was left for choice among the prize-winners in the single cock class, the Accrington cup bird coming-in for similar honours here, but closely pressed by a stylish bird shown by Mr. G. Hall. The third prize went to an adult bird, gamey in every respect, and by far the best-coloured bird in the Show, but somewhat short-legged. Hexham came well to the front in this section. A Pile hen of great merit (seen from a Game-breeder's point of view), was first, a very good Wheaten second, and a Black rose-combed third. Most of the next class were noticed; the decisions among the first three being ruled only by feather and condition. All were Black Reds. In the Variety class Mr. Hall won with good Duckwings, capital in all points; the second were of that colour but dirty; and the third Pile. Here again was the old mistake of four classes for Game Bantams, and the husks thrown to all the rest of the varieties, and it is not at all surprising that only five pens were shown.

Both Aylesbury and Rouen *Ducks* were very good, the Aylesburies shown by Mr. Stonehouse being in grand bloom.

The Selling class was large, and the first prize given to a good Black Red Game cock, which was much better than that shown by the same exhibitor in the single cock class; second was a Buff Cochins; and third a Black Red cock. In hens a Buff Cochins was first; second a White; and third Red Game.

If the quality of poultry shown by cottagers of the mining districts is any guide, then the Society has made its mark, for these classes contained as good birds as were shown in the open classes, this being particularly the case in *Cochins* and *Bantams*.

PIGEONS were a capital entry, and in many classes the birds were such as will with difficulty be beaten. Mr. Emerson Beck with succeeded in pulling off the first in Carriers with a grand bird, also the cup; but the second, though good in other respects, was rather faded in colour. In Short-faced Tumblers an Almond of good colour and marking, but a little mousey in the face, was first, and a Yellow Agate second; and in the next class a Red Mottle was first, with a nice Red Beard second, both being perfect. Pouters formed a grand display. A large Blue Pied full of character was first, and an exquisitely-marked Black second, while an enormous Mealy, whose proper place is in the breeding-loft, was highly commended. Dragons were good but heavy; first Yellow, second Blue. Nuns were pretty good, with Owls and Turbits only moderate, while Barbs were tolerably good. Jacobsins were good in colour, hood, and chain. First a rather large Red, and second a very small Yellow; the Fantails showing rather smaller than of late, and good in other respects. In the Variety class Mr. Ord's grand Grey-frill Barb was first; and in the Selling class a White-frill Barb.

CANARIES were but a small entry, as may be expected at this time of year, when more important business is on hand in the harems, but there were some nice birds shown, and we thought upon the whole they were pretty well placed. Of Belgians there were but two cocks, Buffs, and four hens, among which were some nice sleek birds. Of Crested there was but one in each class. The Glasgow Dona were well shown, and it is a matter of surprise to us that these sober-plumaged birds are not more cultivated. Lizards were very poor, while in Goldfinch Mules the winners were all even-marked and very good. A class for common Canaries produced four specimens, and the first, a Yellow Even-marked bird, was extremely good, the second being Buff-marked.

Goldfinches were good, and Linnets a very grand lot; while in Singing Birds the first was awarded to a four-pointed marked Canary, the second to a Bramblefinch, which, by the way, it would be a treat to hear, and the third prize went to a Green Canary. The Selling class produced a few good cheap birds. The first prize went to a Goldfinch Mule, the second to a Goldfinch, and the third to a capital long Don Canary.

The list of awards appeared last week.

### WOOD PIGEON AND DOVECOTE PIGEON PAIRED.

I HAVE thought that a short account of the pairing of a wild Wood Pigeon with a Dovecote Pigeon might interest some of your readers.

A dark blue hen flew away from my son's dovecote last year, and this season it has paired with a Ringdove, and they nested in a scar about half a mile from my house, on the banks of the river. The keeper on examining the nest this morning found two young birds in it nearly fledged, one of which he took out, and the bird had its crop crammed full of the seeds of the wild mustard and barley; but the terror inspired by being taken out of the nest caused it to throw-up so much from the crop that it was choked. It resembles the Wood Pigeon much more than its

female parent, but this is not very remarkable, as I find in the crosses in my poultry-yard that the progeny resembles the males more than the females—for instance, in the cross between the Black Spanish cock and the Golden Hamburg hen the chickens are almost invariably black. I send you these few particulars, because such a union as that between the wild Wood Pigeon and the tame bird from the dovecote, is what has never come under my observation previously, nor has such a fact ever been recorded to my knowledge. There is not the slightest doubt of the facts.—T. G., *Clitheroe*.

**SALE OF EGGS BY WEIGHT.**—The Legislature of Massachusetts has lately passed a law fixing 1½ lb. as the minimum weight of a dozen eggs. This is a move in the right direction, and we hope other States will follow it up. An egg from a well-fed fowl is heavier and richer than an egg from a common fowl that is only half-fed, and it is time that this old style of buying and selling eggs by number instead of weight should be discontinued. It discourages the breeder of blooded and fine fowls to find that their large eggs fetch no more than the small and poor produce of inferior poultry.—(*Flint (Michigan) Globe*.)

## THE POULTRY-KEEPER.—No. 5.

### THE HOUDAN COCK.

#### GENERAL PROPORTIONS AND CHARACTERISTICS.

Body a little rounded, compact, of ordinary proportions, of low stature, solidly set on strong feet. Breast, thighs, legs, and wings well developed. Head strong, half-crested; whiskers,



Fig. 10.—Houdan Cock.

cravat, triple comb, spread out sideways but plates transverse. Five toes on each foot. Plumage variegated or spangled, black, white, and straw-coloured.

#### SIZE AND CHARACTERISTICS.

**Body.**—Circumference in the largest part, with the wings closed behind the thighs at the part where they are jointed, but without taking them in, from 18½ to 21½ inches; length to the end of the rump about 10 inches; size of shoulders, nearly 8 inches.

**Weight.**—At full age 6 lbs. 10 ozs. to 7½ lbs. Flesh very abundant. Bones small, about an eighth of the weight.

**Weight of Chicken.**—The chicken fattens till four months old; it is killed at four months and a half. It weighs, the crop and the intestines taken out, 4 lbs. 13½ ozs.

Intestines empty .....	3½ ozs.
Gravel contained in the gizzard and feathers ..	1½ "
Bones .....	8½ "
Flesh comprising the liver and gizzard....	3 lbs. 15½ "

Taking from the weight of the flesh, the liver, the gizzard, the flesh of the head, the neck, and the feet, in other words the giblets, there is 3½ lbs. of solid meat. It will be seen that the

bones of this variety should at least be reckoned an eighth, or the bones are about a quarter of the useful meat.

**Size.**—From the upper part of the head to under the feet, in a resting position, 19½ inches, in a moving position, 23½ inches; from the back under the feet 15 inches.

**Head.**—Length, 2½ inches. Comb triple, the plates in the direction of the beak composed of two flattened plates of a prolonged and rectangular form, opening to the right and left like two leaves of a book, denticulated at the edges, thick and fleshy. A third caruncle comes out of the centre of the two preceding ones, of the form of an uneven strawberry and the lengthened husk of a filbert.



Fig. 11.—Houdan Cock's Head.

large as a tare seed, appears on the beak between the two nostrils.

**Gills.**—From 1½ inch to 2½ inches; they grow out of the comb close to the fleshy part which forms the cheeks, surround the corners of the beak with distinct protuberances, and the eye with a thick bare eyelid.

**Ears.**—Short and hidden by the whiskers.

**Half-crest.**—Falling towards the back and sides, some feathers at the end pointed and drooping and pointing upwards. Length of feathers, 2½ inches. Size of the crest from 4½ inches to 5½ inches.

**Cheeks.**—Bare, surrounded by whiskers formed of short, turned-up, and pointed feathers.

**Cravat.**—It begins between the gills under the beak, descends the length of the neck, and stops at 2½ or 2¾ inches, larger at the bottom than at the top.

**Eye.**—Iris, golden yellow. Pupil, black.

**Beak.**—Strong and a little hooked, black at the beginning and yellow towards the tip, bending towards the cravat. Corners of the beak very much turned-in.

**Physiognomy of the Head.**—Different to that of any other variety by many remarkable traits. The head forms with the neck an angle only a little open, so that the beak lowered, and seen above is like a nose. The comb, square and flattened, seems to be a fleshy forehead. The cheeks are surrounded by feathers turned up, which are like whiskers. The corners of the beak turned-in have the appearance of a mouth and a cravat of feathers joined to the gills are like a beard. The crest like a mass of hair, and the whole face immediately suggests that of a man.

**Foot and Sole of the Foot.**—Has five toes, three fore ones resting on the ground, and two hind ones, one or both resting or not resting, varying on different birds. The two hind toes are rather detached or drawn together, and nearly always one above the other. Length of sole, 4½ inches; circumference, 2½ inches. Length of toes, middle ones, 3½ inches; inside ones, 2½ inches; outside ones, 2½ inches; hind ones from 2½ to 3½ inches.

**Colour of the Foot.**—Of the full-grown a leaden grey; of the pullet a bluish grey and white, with pink blotches.

#### THE PLUMAGE.

The plumage should invariably be black, with white and straw colour; those which have any red in the plumage should be discarded at once. The plumage of the Houdan is called spangled or speckled. It is irregularly composed of feathers some black, some white, some black tipped with white, and others white tipped with black. In the most-esteemed birds the feathers of the hackle are black, white, and straw colour; feathers of the breast black tipped with white; feathers of the loins velvety black with a greenish hue, speckled with white and yellow at the tips; feathers of the sides and abdomen mixed white, black, and grey; feathers of the thighs black and white, speckled with white at the ends; the outside and inside feathers of the leg black, strongly speckled with white at the ends; the feathers covering the tail, or the large, middle, and little sickles, black tinted with very brilliant green, sometimes intermingled with spots of white; feathers of the tail, or great tail feathers, white, black, black mixed with white, and vice versa; shoulder feathers straw-coloured, tipped with white; large feathers of the pinion white, or black and white, irregularly spotted; large flying feathers white, mixed with large black irregular spots; the whole of the flight feathers being white is preferable; feathers

covering the wings black, with very bright tints of green, irregularly spotted at the ends.

## POUTERS, ANY OTHER COLOUR OR MARKING CLASS.

At the beginning of this year there were certain letters written in favour of this class being continued as an exhibition class; one notably by my special friend at Glasgow, Mr. Huie. I had, in my account of the great Crystal Palace Show, advocated just the very opposite, and my opinion was strengthened by the fact that Glasgow, the home of the Pouter, had excluded the mis-marked birds from competition. The subject dropped, and I for one was willing it should drop for a while, feeling sure that with the advance in beauty of the birds now exhibited at Pigeon shows, these said Pouters would as gradually disappear as inferior fowls have disappeared from our poultry shows. The other day, however, a bundle of *Fancier's Gazettes*, all that have yet been published, were sent me by a friend. I was as yet in ignorance of this new publication, save by one odd number. Now, on reading straight through the whole numbers of the *Fancier's Gazette*, I found that this Pouter controversy had been continued in its pages, and myself by name, or rather *nom de plume*, quoted; so I hope, having been mentioned there, I may refer to the subject here. Kindly always, but still several times, the words "WILTSHIRE RECTOR" have appeared in our new contemporary; and how my Scotch friends have battled, how they have come up again and again, and cut and parried and thrust with a vengeance! Mr. Wallace ought to be a descendant of the redoubtable Sir William Wallace, and the others have been equally combative. Always commend me to Scotchmen for going right ahead when once roused—calm, cold (externally, never in heart), quiet, undisturbed; not the tongue or ready fire of a Celt, but, once roused, away goes the scabbard. I thought real fighting was reserved for kirk matters, often such as we Englishmen never can understand. I tried hard during the four years I lived in Scotland, but I tried in vain. Scotchmen can fight over kirk differences, slight to all save Scotchmen; and now I find there is another subject they can fight about, and with a will too, and that is Pouters. While gently poking fun at my combative Scotch friends, I glance upward as I write, and there hangs a photograph—a photograph much prized by me as a memento of my visit to Glasgow and Glasgow Show in 1868. 'Tis a picture representing twenty-one Pigeon fanciers. There sits in the centre Mr. Montgomery, looking benignant upon everybody, and really his house at Belfast ought not to be named as it is—"Wolf-Hill," for there is nothing of the wolf about its master; and there, too, sits Mr. Huie—leaning, aye! leaning upon Mr. Wallace; he will not lean upon him on any account. But enough of funning, now for my subject.

I object as a rule to the exhibition of mismarked Pouters. Their value is very great in the loft, they help in forming standard birds, and keep up good strong-blooded Pouters. But an artist exhibits pictures, not his brushes, his canvas, his paints, and his palettes. Now I hold that the grand standard Pouters are the pictures, the others are what help to make the pictures, and should therefore be kept out of sight. The Birmingham Columbarian Society use these words (*vide JOURNAL OF HORTICULTURE*, number for June 30, 1870, page 471), "We have had of late so many mealy, mismarked, bad-coloured specimens, that we are satisfied that there is yet room for improvement." So say I.

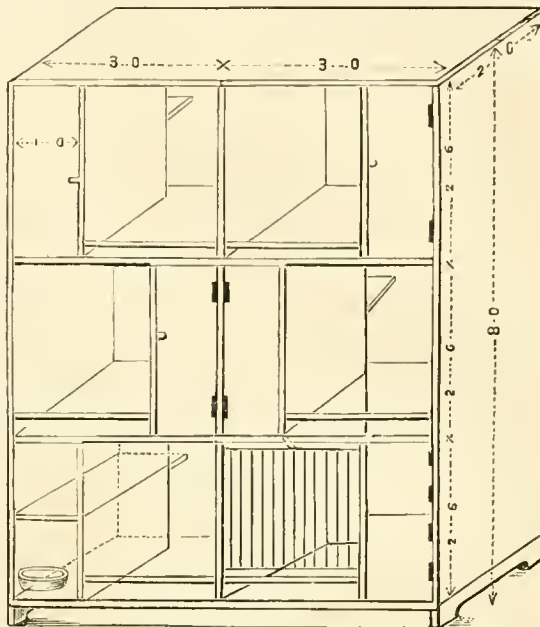
I agree with Mr. Wallace. I want progress and advance towards perfection. I think he has truth on his side when he alludes to the mismarked as the scaffolding of the spire; but the thing to see is the spire, so remove the scaffolding. But I think there is a difference to be noted among "Pouters, any other colour or markings." Thus, a good Mealy or a good Chequer is to my mind much superior to birds with here and there a smudge of colour on a white ground.

Now I propose this solution of the difficulty: Classes first of all, of course, for the standard colours, always dividing the Yellows from the Reds; then prizes of less value for Meales and Chequers, and in Scotland for Sandies—in England these birds do not take. Then I would wholly exclude from any exhibition all other mismarked birds, save that they should appear in the Selling class, as many fanciers want such for loft use. Mealy and Chequer are old and distinct colours, as distinct and well known by me thirty-five years ago as now; and I have little doubt their colours date from the earliest days of the Pouter fancy. A good Mealy well barred is a pretty bird, and Chequer is the oldest of all colours in Pigeons. Hence I would give them a place—a lower one, it is true, in a show, but not let the smudged splashed gentlemen appear at all. They to my mind are useful tools; but we must show, not materials for pictures, but the pictures themselves.

This is my suggestion, which I hope will meet with acceptance, and with a hearty shake-hands in imagination with my Glasgow-made friends; and I venture to add, "Ye ha' jist had eneu of fightin, I ken, my lads."—WILTSHIRE RECTOR.

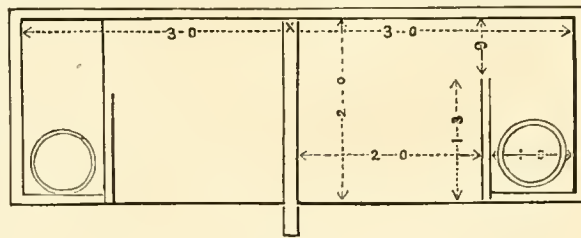
## A PIGEON-BOX.

We are indebted to Col. Hassard for the following sketch of a Pigeon-box, sent us some time since; it shows an arrangement for Pigeons similar to what he advocated when in Canada, and few who knew him will deny his experience was great in this respect. It was, he says, constructed for large birds, but the fancier can alter the dimensions to suit the space at his disposal



Elevation.—Door of nesting place removed to show the interior.

as well as the size of his birds. If desirable, it may be made only 3 feet wide; it can also be made portable by any handy carpenter, if so required, and by putting a false pitched roof to the top, it would do against a wall as well as inside a loft. But let us have the Colonel's own words. "You will say, 'We know all this, you have told us so before.' Admitted, but an ounce of experience is worth pounds of theory, certainly in Pigeon-keeping, so I will give my reasons for sending it. I used to con-



Plan.

struct them all as in the top or centre rows, whichever place suited best, one over the other, so that except in the distance from the floor they would be exactly alike, whichever arrangement you followed, top or centre. The consequence of this was that a bird making a mistake in flight found itself in the wrong box, and, being somewhat dull of apprehension of that fact, caused fights, smashed eggs, &c., as I know to my loss; and to obviate it I have placed the nesting places alternately, thus causing a difference in appearance, so that they are not so likely to go wrong. Besides, it is easier to construct it on this plan, as the cross partitions can be nailed in better. The bar across each nest is for the birds to roost on at night, and to fasten a door on to, as shown in the bottom compartment. I do not approve of any shelf running along the front outside; it forms a neutral ground for fights; and to prevent this, on the top flat on the plan the centre partition projects a little. This is by far the best plan of box I have tried or seen."—(Canada Farmer.)

## CAUTIONS IN ARTIFICIAL SWARMING.

As this year many bee-keepers are short of stock owing to the fearful mortality that has taken place among bees within the last twelvemonth, not a few will now be thinking more of in-

crease of hives by swarming than of honey. This is most unfortunate for all whose short-sightedness did not feed sufficiently what stocks they had, or whose courage failed them after so disastrous a summer as that of 1873. Such persons in many instances have to begin over again, where others, wiser than they, are in a position to profit by a season which bids fair to recompense all persevering bee-keepers with abundance of honey.

There have been instructions given in this Journal for the management of artificial swarms, and some cautions have been laid down. Let me add at least one caution, which, as far as my memory serves me, has not been given. Beware, after driving a swarm out of any hive, of letting the driven stock stand as a separate hive to rear its queen. In many cases utter ruin of the stock so treated has been inevitable. It is an excellent plan to drive a swarm out of a hive quite early in May. In some very forward years it may be done in April. This swarm, in its new hive, should always be put in the place of the driven stock. About this there is no difficulty nor risk. The swarm, with its old queen, will do well in the old accustomed place. I have never known an instance of failure. It is with the driven stock that the treatment may be unfortunate. The most safe and altogether the better treatment is to put this aside on some temporary stand in a quiet spot some 20 or 30 yards from the old place for twenty-four hours, during which time the older bees will slip away one after the other, and rejoin their companions and their queen. It is not a bad plan to disturb them with a little smoke of fustian or brown paper. The latter is equally efficacious, and always procurable; but Mr. Pettigrew, for some queer reason, belauds fustian smoke as of special virtue. So disturbed they sooner move, and it is desirable that they should rejoin their queen the same day if possible. Those who move a day later are often received unkindly by their old companions, as if they had undergone some suspicion of treason, having probably during the night made some preparations to repair the loss of their queen. The more entirely the old hive is denuded of bees at the end of twenty-four hours, the more successful will be its treatment if it be not left to itself. In this case, if left to itself, it would take a long time before any attempt were made by the young bees to replace their lost queen, and much brood would inevitably be sacrificed. Frequent, indeed, is the failure of driven hives so treated. The best treatment is to move to a new stand in the busiest part of the day some other strong stock, and to put in its place the denuded hive. In this way attention is drawn immediately to the revolution that has taken place. There will be no fighting with the few strangers, mostly young bees, in the substituted hive, and the loss of the queen will be repaired with the least possible delay; nor will the brood suffer injury at all.

It so happens that my best three hives this spring had taken possession in each case of the supers of last year, which I allowed to remain on the hives during the winter. The hives below had no honey whatever, so the bees wisely ascended to the better-stored attics. I have just made three beautiful swarms with these supers. Finding that the bees had increased so much as to have not only filled the supers with brood and honey, but that in each case they had overflowed into the hives below, I proceeded to make my swarms out of them. In one case, on taking off the super and putting it by for awhile, it became evident that the queen had gone down below. There was no difficulty, therefore, after allowing the adult population to fly on to their old home, in shifting a strong swarm and putting the now deserted super in its place. All has gone well with this swarm without any driving. In the case of the two other supers the queens happened to be there, and were dislodged by driving; otherwise the treatment was the same, and the success so far is alike. Of course the driven bees with their queens were at once set over the stocks from which the supers had been taken. To avoid confusion in the apiary, these swarms were made on separate days. Thus it will be seen I have nine strong stocks in place of six, and if I were chiefly desirous of increasing my hives, I should proceed to make a lot more out of these six in the course of a fortnight or three weeks from the time I made the former swarms. Nor do I expect to lose in honey, for, as all these nine hives are overflowing in population, they may reasonably be expected to fill some supers, especially those which retained their queens, and where, in consequence, there is no check to the continuous breeding of young bees.

In cases where the hives so treated are very full of brood there must be an outlook for swarms at the time the young queens will be issuing from their cells, and my experience leads me in most years to look for such issue as almost certain. To avoid risk of losing them in my own case, I intend at the expiration of about ten days from the day of their forming royal cells, to repeat the process of the ten days before, in order to weaken the population, and so reduce to a minimum the chances of their swarming. As this is still in the future, and I may vary the details, I shall report progress hereafter. Let me, however, repeat my caution, that in no case should the denuded stock, after queen and bees have been removed from it by driving or otherwise, be established as a separate stock. To

insure its safety it must be re-supplied with bees from some other hive.

I have had much experience with artificial swarms, and with varied success; I now give the result of it. Cutting out royal cells for the manufacture of separate swarms I have not found in practice to be always reliable. Theoretically there is nothing to be said against it. But whatever be the cause, I have not found it so successful as to warrant my recommending it for general adoption. The safest of all plans of artificial swarming is undoubtedly the "three-out-of-two-hive" system. There is the minimum of risk and loss with the maximum assurance of success.—B. & W.

### BEE-KEEPER'S CALENDAR FOR JUNE.

Mr. P.—Last month, Mr. B, you asked about virgin swarms, combs, and honey. Virgin swarms are the products of swarms of the passing or current year. They are the grandchildren of stock hives. For such swarms the term virgin is a misname, and was doubtless given to them in ancient times when people were ignorant of the natural history of bees, and fancied that swarms were formed of young queens and young bees only. Old queens go with first swarms; and as it is from these that, in Great Britain, virgin swarms are obtained, the old mother queens are of course in them. Swarms from swarms of the passing season are what are very improperly designated "virgin." Thus understood, no one has a desire to give them another name.

Mr. B.—Do you approve of taking virgin swarms?  
Mr. P.—No, unless it be to increase the number of stocks in very fine early seasons. If honey is the object sought, I think that the practice of taking swarms from swarms the same season is not the most profitable one. Virgin comb is a term more proper and justifiable than virgin swarms, inasmuch as it indicates honeycomb which has never been used for breeding purposes; and this comb may generally be had from the hives of first and second swarms as well as from virgin swarms. Combs become thickened and discoloured by being used for rearing young bees; indeed, after being once used in this way they should not be sold or eaten as honeycomb. Hives managed on the non-swarming system do not often contain pure honeycomb, for bees will, before swarming, try to fill every empty comb with brood; but supers may be filled on such hives with combs and honey unsurpassed for purity and excellence. Virgin honey, if it means anything at all, is pure honey obtained from virgin combs.

Mr. B.—I had a natural swarm from my best hive a week ago. I happened to be in the garden at the time, and saw the whole affair. It was a grand sight. One continuous stream of bees gushed out of the door of the hive, and ran on to the point of the flight-board before they took wing. It was an exodus pell mell. In their impetuosity to be off some tumbled over the flight-board on to the ground. For some minutes there was a cloud of bees over my head, and their noise was prodigious. Speedily they began to settle on the branch of a gooseberry bush close to the hive, and soon after they were all hanging in a large cluster or bunch. I shook them into a hive, and at once placed them where you see them. Some people, I understand, sprinkle syrup on the inside of their hives before they put swarms in them. I used nothing of the kind; simply hived the swarm, and all has gone on well.

Mr. P.—You have acted wisely, for bees in swarming carry with them enough to keep them alive for three or four days. The beautiful gush from the hive to the point of the flight-board, as seen in the act of swarming, is owing to the bees being so full of honey that they cannot rise on the wing till they have filled their bodies with air. Pigeons and sparrows in being shot from a trap illustrate what I mean. If the trap or box is shaken on the withdrawal of the lid, and the bird made to fly before it has taken an inspiration or two, it rises heavily and slowly, and is easily shot; but if it fill its body with air before it stirs, it goes off like a dart. Pheasants hop and bees run while they are filling their bodies with air, and those that you saw fall over the flight-board could not rise on the wing till they got more air sucked-in. So heavily laden are emigrant bees, that they come to the ground in thousands if a cloud intercept the rays of sun while they are on the wing. I am glad your first swarm alighted on a bush, for if it had settled on the trunk of a tree or high branch, you would have felt somewhat nervous in climbing the tree to cut the branch and carry all to the bottom, and there hive them; and this is often more easily done than sweeping them from the boles of trees into hives. You also did right in placing the swarm where it is as soon as the bees were hived.

Mr. B.—Now let us turn up and examine the mother hive, for I am anxious to see the queen cells and to know when I may look for a second swarm.

Mr. P.—One, two, three queen cells filled and sealed up. You see them all very plainly, and could easily cut them out. The queens in these cells will be matured and perfect in two or three days, when piping will commence.

Mr. B.—How do you know that?

Mr. P.—Because the lids of the cells are becoming brown, which indicates that the young queens are nearly ripe. With your finger and thumb break this cell from the comb and take it out.

Mr. B.—How easily done! Do I really hold in my hand an unborn princess?

Mr. P.—Yes; and with it I wish to teach you one or two lessons of great importance to those who seek to manage bees profitably. Let us now examine this other old hive with the black combs. Please to smoke it and turn it up. Well, it is full enough for swarming; see how the bees are heaped on the board and running over its edges. By swarming it now artificially you could utilise the queen you hold in your hand.

Mr. B.—In what way, and with what advantage?

Mr. P.—An hour or two after a swarm with the queen shall have been taken from this hive the bees left will commence to seek for their lost queen, and failing to find her will take two, three, or more eggs from common cells and place them in royal cells, and thus do all they can to repair the injury they sustain in being bereft of their queen. Now, if this queen's cell, which you hold, were fixed between two of the combs in the centre of the hive as soon as the bees begin to mourn their bereavement, they would gladly accept the cell, and take special care of its royal inmate, knowing well the value of the boon that would thus be bestowed. They could not rear a queen from one of the eggs in their own hive in less than fourteen days. This queen from the other hive would be hatched and in a laying condition some twelve days sooner. To give late swarmer queens from earlier swarms as soon as they are deprived of their queens is one of the master strokes of bee-management. But knowing that you are bent on having your bees in better and larger hives this season, it will, I think, be better not to give the later swarmer a queen in this way, for if given it would commence to lay before the brood now in the hive would be hatched. As these hives are small, and the season not an early one, I advise you not to take second swarms from them, and thus you will obtain larger swarms, which we call "turn-outs," on the twenty-first day after the first swarms were obtained. Bees being only twenty-one days in their cells, you may then take the honey from the old hives without sacrificing a single cell of worker brood. Drones are twenty-four days in their cells, but there is no loss or sacrifice in destroying drone bees and brood. In turning all the bees out of stock hives on or after the twenty-first day from swarming, and taking honey from them, the bee-keeper has two honey harvests every favourable season; and, moreover, his hives are never filled with old, black, tough combs loaded with pollen.

Mr. B.—I well understand all you have said. If my hives were larger and all I desire as to shape and appearance, would you advise me to take second swarms if they issue of their own accord?

Mr. P.—Yes, for second swarms from large hives are in fine seasons of great value, their hives rising in weight to 50 lbs., 60 lbs., and 80 lbs., containing from 30 lbs. to 40 lbs. of honey each. Please to bear in mind that if we impart a queen to a hive after the first swarm has been taken from it, no second swarm will be obtained; and if second swarms issue from late swarmer or when we do not want them to swarm, they should be hived and kept in their hives for a few hours, with a view to let the piping queens be all destroyed but one, then carried to the front of the mother hive and cast on to its flight-board. One queen will be found cast out dead next morning, and no more swarming will take place. Before I leave you, Mr. B., for a month, let me give you another idea (a little bit of my own peculiar practice), which you will find in future years to be of considerable importance. In bee-keeping, practice must vary with the season. A person with an open eye and active brain will not always be guided by rote and rule; he improves upon his own practice and the teaching of others. In most seasons large bee-keepers have early and later swarms. Some seasons hives contain but little honey three weeks after swarming. In such seasons we do not get much honey at the first harvest; but still occasionally we turn the bees out of hives when they do not contain much honey and put them into empty hives, and immediately take swarms from later stocks to re-people those hives from which the bees have been driven.

Mr. B.—Why?

Mr. P.—Because the queens in these hives are just born, and will not commence to lay for ten or twelve days; whereas the queens in the later swarms are laying two thousand eggs daily at least. The bees have thus an opportunity of setting the eggs laid by their queens, and in fourteen days such hives are filled with brood from side to side, and the "turn-outs" have time to make combs before their queens commence to lay. It is not necessary to wait till the twenty-first day before we turn bees out, when we re-people the hives immediately afterwards, for the swarms imported and imparted to them hatch the brood that may be unhatched at the time of turning out. This practice is of vast importance to us, for we thus make late swarms equal to early ones, and save ourselves from the fear of losing second swarms by turning all the bees out of hives into empty ones as

soon as the piping commences or the first queens in them are born.

This season, Mr. B., has been so far unfavourable for honey. The month of May has been a discouraging one to apiarians. You may find it necessary to feed swarms. It is well never to let bees think of famine or feel the pressure of hunger. Keep your swarms at work in building combs and hatching brood, so that, even in cold or rainy weather, you may hear a hum of joy and prosperity in your hives. If any of your friends wish to commence bee-keeping, now is a very good time to get swarms from the cottagers; and those who buy should have them placed in their gardens on the day of swarming, or, in other words, before they commence to build combs.—A. PETTIGREW.

## CRYSTAL PALACE HIVE AND HONEY SHOW.

A COMMITTEE of apiarians propose to offer £100 in prizes for honey, honeycomb in supers, certain kinds of hives, and two essays. I am sorry I have not a schedule by me to quote from. The Committee have promises of contributions to the amount of £70 and upwards. We may, therefore, look forward with some degree of certainty to the apiarian exhibition at the Crystal Palace next September. If thirty gentlemen more would contribute 20s. each towards this prize fund, the Committee, no doubt, will thankfully receive their names, and be thus encouraged and enabled to prepare their final schedule of prizes, and make all necessary arrangements for this proposed apiarian fête. I sincerely hope that many ladies and gentlemen will lend the Committee their countenance and support. All other exhibitions of bees and honey in this country have been mere local affairs compared to this. I shall, therefore, be glad if it come off very successfully and satisfactorily. One great "crystal palace" has already been manufactured in Manchester, and sent to a distant county—I know where—to be filled with honeycomb for the occasion. If a dozen or two of such palaces be well filled and appear at the show they will create a new and healthy sensation in London and its neighbourhood. Burke's work on the "Sublime and Beautiful," contends that the sublime produces on the minds of men far more striking and lasting impressions than "the beautiful." If we have a favourable season for honey-gathering, and some large supers be exhibited next September, a great and lasting impulse will be given to bee-keeping in the south of England. As my desire is to help the Committee, and not to hinder them in any way, I will abstain here from suggesting improvements on their schedule of prizes which I saw some months ago. Imperfections, if they exist in this effort, will be excused and forgotten by the public. I wish most heartily that great success may attend the efforts of the Committee.—A. PETTIGREW.

## SILKWORMS.

AFTER many unavailing attempts, we succeeded last spring in obtaining five hundred eggs of Bombyx Mori, five eggs of Bombyx Yama-Mai, and three cocoons of Bombyx Cynthia. We kept these in a cool dark cellar until the 21st of May, on which day we arranged the eggs on saucers covered with muslin, because on a previous occasion, having neglected the latter precaution, a robin in search of a new dish, we presume, dined off the silkworms' eggs, and liked them so well that it did not leave one.

The cocoons of Bombyx Cynthia are like in appearance to filbert-shaped pieces of yellowish brown tow. We manufactured a cage for them of muslin, with light cane frames, and suspended them from the top of it by a thread, and placed the cage and the saucers containing the eggs on a sunny shelf in a cool greenhouse.

We visited our treasures at least twice every day, and at the end of a week were somewhat startled at seeing some dark object fluttering in the cage, and on close inspection we found two magnificent butterflies had emerged from the cocoons. They were fully as large as bats, their wings beautifully shaded and coloured with brown, violet, and white; a crescent in white and violet decorated each wing; hence they are called "Cynthia."

Whilst contemplating these singularly beautiful insects we noticed a slight movement of one of the cocoons, and saw perhaps one of the most singular sights the insect kingdom affords—viz., a queer little head, with black beady eyes, pushing out through the top of the cocoon. After a great many efforts the body followed the head, and the curious creature perched on the top of its late prison, its wings hanging limply down by its sides.

Having to leave our entomological pursuits, we returned to the greenhouse as soon as possible, and found the limpness had quite left the new comer's wings, and it was as large and handsome as its two companions.

The following day we placed a sheet of white paper on the bottom of the cage; and finding we had only one female moth, we removed one of the males, and let it fly about the greenhouse, which it ornamented far more than the choicest flower that ever bloomed there.

In a few days the paper was covered with eggs, and in about a week after the brief existence of the Cynthia butterflies terminated we put the eggs in a saucer to hatch out. One sunny morning we found B. Mori and B. Yama-Mai hatched out; the former looked like fine black thread cut into lengths of an eighth of an inch; there were myriads of them. B. Yama-Mai were yellow, and covered with black hairs, and half an inch long.

In another week we had a fine brood of B. Cynthia worms. They were a pretty yellow colour, slightly spotted with black. Some of the Bombyx Mori were fed on mulberry leaves, the rest on lettuce, to prevent a famine of mulberry leaves; for we had only six young trees, one of which died that season from having too much leaves taken off it.

B. Cynthia and B. Yama-Mai will not eat picked leaves, but must have a branch, off which they nibble the leaves, which are kept fresh by plunging the stem in water or damp sand. Cynthia feeds on the Ailantus, and Yama-Mai on the apple tree.

Our silkworms grew apace, ate, slept, and changed their colours at intervals, and when near spinning time B. Mori was 4 inches long, a beautiful pearl colour; B. Cynthia 4½ inches long, and pale green; and B. Yama-Mai gorgeous, being of a beautiful transparent green spotted with silver.

Having devoured an incredible quantity of leaves during the six weeks of their existence, the valuable little creatures commenced their appointed work, the end and aim of their short existence. It was curious to see how they gradually became invisible through the network of silk they so deftly covered themselves with, and which, from being as transparent as the finest tulle, soon grew quite opaque.

I gathered a fine crop of silk. The cocoons spun by the mulberry worm were very fine, and bright gold colour; the silk of the same species of silkworm fed on lettuce was a pale green colour. I have already described the cocoons of B. Cynthia; those of Yama-Mai are the size of a pigeon's egg, and green.

We now hung up the Cynthia cocoons in a cool dark place, as the butterflies of that species pass the winter and spring in their chrysalids. Quantities of tiny yellow moths emerged from the cocoons of B. Mori, whilst out of those spun by Yama-Mai came magnificent butterflies, their colouring being a superb arrangement of scarlet, yellow, and black.—ARACHNE, *Rathfarnham, Co. Dublin.*—(*Irish Farmer's Gazette.*)

## OUR LETTER BOX.

**SPANISH HENS DYING (W. P. B.).**—We should attribute the death of the hens to overfeeding and consequent heat and internal fever. A hen of any breed cannot, in such a state of body, lay an egg, and any rupture in the egg-organs is fatal if there be an egg in them at the time. We should discontinue the wheat and the table scraps. Feed only on barleymeal. Feed them night and morning. We are not sure we would not fast them entirely for a couple of days. If you could see the approach of the attack, you could save fatal consequences by the use of a wing or tail feather dipped in oil. You should pass it up the passage till it reaches the egg. It will be laid at once, but be careful not to use any force. An old locksmith once said an oiled feather was the best workman when the lock would not act, and we say an oiled feather is here the best doctor. We repeat, Use no strength; whether the egg is broken by the strain, or by you, it is alike a fatal case.

**DARK BRAHMA PLUMAGE (E. D.).**—The breast of a Dark Brahma cock may be black or speckled with white. The best two birds ever seen of this breed were sold at Birmingham for £110. The cock had a speckled breast. Black-breasted cocks in this breed are like the cocks in the Silver-Greys. In that class of Dorkings it is most difficult to find perfect specimens. We do not pin our faith to black-breasts, nor do we recollect that we have ever said it was the test of a good bird. Our own opinion is that, in birds of size like Brahmas, the presence of a few white feathers is unimportant. We do not even object to a speckled breast. You will be prepared after this for us to say, that taking your description, we think at present you may be satisfied with your chickens. We are bound to tell you must not look for black-breasted adults from light-breasted chickens. Increase of age tends to lighter, not darker feather in all fowls. A Brahma cock should be large, wide across the back, between the hip bones, well feathered on leg and the first toe (if the second so much the better), good pea-comb, bright sharp face, well-curled black tail inclining to white as it gets older, yellow legs, and wings well clipped up to the body. No buff in any part of the body. Light hackle and saddle, and steel-barred wing. No vulture hooks.

**MINORCAS (Ellice).**—They are difficult to describe. They are washed-out Spanish. The tradition is they were Spanish fowls brought over by the "Worthies" mentioned in Kinglake's "Westward, Ho!" and that they have remained the fowls of the country ever since. We confess we cannot answer your question as to the white breast, but the fact shows they have still something in common with their first parents. Spanish fowls are bred with white flights, and it is no uncommon thing for a pure Spanish hen to moult sometimes speckled with white, and in rarer instances with entirely white plumage. We have therefore little doubt in saying that the white chickens may be pure Minorcas.

**CHICKENS' FEET CONTRACTED (Idem).**—All your chickens are cramped. What is the flooring of the house in which they roost or are kept? Is it brick, wood, stone, or asphaltum? If so, that is the cause. If they are out of doors the cause must be found in insufficient food. If they are indoors put them out. Let the rip be on the grass, and the bare wide enough for the chickens to run at liberty. Feed liberally: chopped egg, curd, bread and milk, cooked meat, chopped fens, and crushed corn. Give them some old ale to drink. If they are at liberty with the hens, shut up the latter in the rips.

**EXHIBITING FOWLS (A Notice).**—Write to the secretary of any show at which you wish to exhibit, and ask him to send you the rules. You need not be a subscriber.

**REARING GOLDEN PHEASANTS (J. T.).**—We gave full instructions in our last number. The hen will sit twenty-three or four days, generally the

latter. They must be allowed only a fenced run on grass the first four or five days, and when they are at liberty the hen must be under her rip for eight weeks, and when freed from it should be tethered. Their food, when young, should be curd made of milk and album, strained quite dry in a cloth; barley-meal or ground oats mixed with milk; chopped egg, bread and milk; a little cooked meat chopped fine. They must be on grass. They always, when grown, live out of doors; they will not use shelter if it is provided. They must be kept dry, and should be shut in the rip with the hen as soon as it is dark. They should be fed at daylight.

**GROUND OATS (W. Hartley).**—The sample sent is good for poultry-feeding. The outer husk should not be removed.

**PIGEONS DYING YOUNG (Sussex).**—Your young Pigeons died of cold with their crops full because their parents left off sitting upon them too early. This a great many high-class Pigeons will do, hence they require other Pigeons as nurses to bring them up. Hardly any Pouters or Short-faced Tumblers, or other superior varieties, will rear their own young, which have to be shifted under other birds when they are a week or ten days, or a fortnight old. Do not allow the Starling to build in the loft.

**HONEY BEE (Dublin, E. Walpole, jun.).**—The dark-coloured bees which have attacked a straw hive in numbers at Dublin are evidently specimens of the common hive bee, small in size and darker in colour than usual. Such specimens were described long ago by Huber; and Kirby and Spence consider the dark colour owing to the individuals being old and with their pubescence rubbed off. Those sent from Dublin are described as wild bees, which may possibly mean that they have come from a colony of their own strayed away, and which have, perhaps, taken refuge in a hollow tree or under the roof of a house. In such the case, or is it merely conjectured that they are wild bees?—I. O. W.

**CONTINUING FEEDING BEES (W. E. M.).**—If bees in your neighbourhood are gathering much honey your swarm will do well without feeding. If the weather is unfavourable another pound or two of syrup will help it much to build combs, and thus give more scope for setting eggs so abundantly produced at this season. You may easily ascertain whether the bees are gathering honey or not by weighing the hives in your hands. Be careful how hives recently tenanted are handled, as young combs before they are attached to the cross sticks are easily shaken down.

**DRONES WITH SWARM (Idem).**—If all the drones went with the swarm let them remain. Your young queens will be matured by-and-by, when they will come forth to meet the drones of any hive. So far, therefore, as the queens are considered, it does not matter which hive contains drones. The probability is great that in the old hive more drones will be hatched in a few days and continuously till the twenty-fourth day after the swarming took place.

## METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.					
	Barom. at 39° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		Rain.	
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1874. May. and June	Inches.	deg.	deg.	W.	deg.	deg.	deg.	deg.	deg.	In.	
We. 27	30.039	61.1	55.2	W.	55.8	73.9	46.7	119.2	42.9	—	
Th. 28	30.028	64.2	58.7	S.W.	57.0	71.3	52.6	111.8	51.1	—	
Fri. 29	30.021	61.9	56.3	S.W.	57.8	66.9	55.1	105.2	63.2	—	
Sat. 30	29.902	62.1	55.5	W.	57.3	73.8	60.6	120.2	48.0	—	
Sun. 31	30.047	65.2	58.3	S.	58.4	73.5	49.4	117.9	46.3	—	
Mo. 1	30.168	65.6	59.1	S.	59.9	75.2	53.2	125.2	50.7	—	
Tu. 2	30.003	68.7	62.0	S.	60.6	81.7	62.6	128.0	48.1	0.197	
Meana	30.030	64.1	57.9		58.1	73.8	51.5	118.2	49.6	0.197	

## REMARKS.

27th.—Fine bright day.  
28th.—Cloudy and dull; slight shower at 11.10 P.M., rain not measurable.  
29th.—No rain, but rather a dull oppressive morning; fresher evening.  
30th.—Fine, bright, warm day.  
31st.—A fine warm day, with a little wind.  
June 1st.—Warmer, but dull at times.  
2nd.—A brilliant sunrise; a warm day; a little dull at times; rather heavy rain in night, or, rather, early in the morning of Wednesday.  
Temperature about 5° higher than that of last week, sun temperature exceptionally high, barometer steady.—G. J. SYMONS.

## COVENT GARDEN MARKET.—JUNE 3.

WE have no alterations of consequence to report.

### FRUIT.

	a. d.	s. d.		a. d.	s. d.
Apples..... 1 sieve	2	0 to 3	Melons..... each	4	0 to 6 0
Apricots..... doz.	2	0 4 0	Nectarines..... doz.	12	0 24 0
Cherries..... ½ box	2	6 6 0	Oranges..... ½ 100	4	0 16 0
Figs..... doz.	8	0 15 0	Peaches..... doz.	12	0 30 0
Filberts..... lb.	1	0 1 6	Pears, kitchen..... doz.	2	0 6 0
Cobs..... lb.	1	0 1 6	Pine Apples..... lb.	6	0 12 0
Gooseberries..... quart	0	6 0 0	Strawberries..... ½ doz.	0	6 1 0
Grapes, house..... lb.	4	0 12 0	Walnuts..... bushel	10	0 16 0
Lemons..... ½ 100	8	0 12 0	ditto..... ½ 100	2	0 2 0

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes..... doz.	8	0 to 6 0	Lettuce..... doz.	1	0 to 2 0
Asparagus..... ½ 100	3	0 6 0	Mushrooms..... pottis	1	0 2 0
French..... doz.	3	0 10 0	Mustard & Cress, potted	0	2 0 6
Beans, Kidney..... ½ 100	2	0 0 0	Onions..... bushel	4	0 7 0
Beet, Red..... doz.	1	0 3 0	Parley per doz. bunches	2	0 4 0
Broccoli..... bundle	0	9 1 6	Peas..... quart	2	0 6 0
Cabbage..... doz.	1	0 1 6	Potatoes..... bushel	8	6 5 0
Carrots..... bunch	0	6 0 0	New..... ½ lb.	0	0 0 9
Canflower..... doz.	4	0 10 0	Radishes..... doz. bunches	1	0 1 0
Celery..... bundle	1	6 2 0	Shallots..... lb.	0	3 0 0
Coleworts..... doz. bunches	2	6 4 0	Spinach..... bushel	2	0 8 0
Cucumbers..... each	0	6 1 0	Tomatoes..... doz.	3	0 6 0
Endive..... doz.	2	0 0 0	Turnips..... bunch	0	3 4 0

## WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 11—17, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.		
11	TH	Meeting of Royal Society 8.30 P.M.	72.1	47.6	59.9	13	45 48	11 48	51	1	5	27	0 44	162
12	F		71.4	46.1	58.8	21	45 3	14 8	10	2	35	6	0 31	163
13	S		71.9	47.4	59.6	20	44 3	15 8	38	2	2	8	0 19	164
14	SUN	2 SUNDAY AFTER TRINITY. [8.30 P.M.]	72.6	47.9	60.3	19	44 3	16 8	16	3	16	9	0 6	165
15	M	Meeting of Royal Geographical Society,	72.8	48.2	60.5	19	44 3	16 8	9	4	13	10	before	166
16	TU	Meeting of Zoological Society, 8.30 P.M.	72.6	48.3	60.4	18	44 3	17 8	17	5	54	10	0 19	167
17	W	Royal Horticultural Society, Fruit, Floral, and General Meeting.	72.9	47.3	60.1	23	44 3	17 8	33	6	21	11	0 32	168

From observations taken near London during forty-three years, the average day temperature of the week is 72.3°; and its night temperature 47.5°. The greatest heat was 90°, on the 12th and 13th, 1812; and the lowest cold 30°, on the 15th, 1850. The greatest fall of rain was 1.46 inch.

## FRUIT-GROWING ON HEAVY SOILS.

**H**OW difficult it is to give directions that shall be generally applicable to all gardens. The longer one lives and the more practice one has, the more careful is he in giving advice to other people; for on close inspection we often find that the practice which answers in our own particular case would not be applicable at all beyond a certain limited area. For instance, after the seven weeks' drought we have now had, and with almost everyone in the neighbourhood crying out for rain, who would not imagine that every plant in the garden would be suffering from the lack of moisture? Such, however, under our peculiar circumstances is not the case. I have not yet had occasion to water a dozen plants, excepting where the roots are confined, or those newly planted. The soil here is not of the kind usually selected for a garden, it being of a stiff clayey nature, but in a season like the present it has great advantages over a lighter soil. It is, however, very expensive to work, and in a wet season it is not easy to get early crops; for in addition to the wet cold soil, we have to deal with an immense host of creeping and flying enemies. The worst of all, I think, are the little black slugs, which appear in thousands whenever the weather is warm and moist. It is a mystery wherever they come from, for sometimes the walks are almost black with them, and the only effectual remedy I have yet found is hand-picking. But says someone who knows, "Dust lime over them." Well, I have dusted lime over them, and rather warm too, and the only effect it has is to make them slip out of their old jackets, after which they start off as fresh as ever. If I can overtake them with a new dose of quicklime before their new skin gets hardened it then has more effect on them, but that is not always convenient, and after trying various plans I have fallen back upon the very oldest one—to catch 'em and kill 'em. But the birds, where are the birds? Well, the birds, especially the blackbirds and thrushes, seem to very much prefer Strawberries and Gooseberries when they are in season, and when those fruits, or some others of equal delicacy, are not in season, they go sulkily away, and get their food somewhere else, and we do not see one of them for days at a time; but let us have a little more fruit ripening than we can find nets to cover, we may be quite sure the birds will be there before it is fairly daylight, and they will not eat small fruits while they can get large ones. I do not believe they ever tasted one of the little black slugs I have mentioned, but I must own they keep us clear of the larger kinds and house snails; therefore their lives are sacred.

Another peculiarity of the soil here, and probably of strong clayey soils in general, is that the fruit trees grown in it do not require hard pruning; they naturally grow rather vigorous if they grow at all, and can scarcely be induced to make small fibrous roots and short growths. If they are persistently pinched and cut hard back they get hidebound, cankered, and covered with moss and

lichen; but let them have a certain amount of development for a year or two, allow them to make shoots as long as can be fairly ripened, taking care to keep them sufficiently thin to admit light and air, they will afterwards get to grow more moderately, and, instead of continually making gross shoots, will form fruit spurs on the growth of former years. By following this plan I have some young trees planted only three years ago as good now as others planted eight years, which were, in my opinion, too much restricted. I do not think it possible to grow miniature fruit trees satisfactorily in such a soil as this. Probably in a light poor soil the miniature form may be the most profitable.

We must adapt ourselves to circumstances; this is one of the most difficult lessons in horticulture. We see a thing done perfectly well in one place, and, perhaps, learn perfectly well how to do it ourselves; but we try the same plan in another place under different circumstances, and the result is utter failure. We must learn certain things for ourselves by practical experience on the spot. No amount of book lore, or seeing work done in other places, will give us the requisite information. It takes half a lifetime's hard work of both head and hands to learn to manage an extensive garden satisfactorily if there are no reliable data to start with, and yet we see many promising young men forced out of places, and pronounced incompetent with only a trial of a year or two.

I will give another instance which I think goes far to prove that fruit trees in the heavy soil here do not like hard pruning. An orchard, principally Apples, was planted fifteen or more years ago, the trees were kept closely pruned, and produced at the time I first saw them a great quantity of twiggy shoots, which were annually cut back to be followed by a greater number of the same sort, and little or no fruit. The stems were hidebound, and covered with lichen, and did not increase in size. Three years ago the shoots were merely thinned in summer, leaving the principal ones their full length, or nearly so, and since then they have been left to themselves. The result is that the trees are recovering rapidly, the stems are swelling, the bark cracking, and the lichen falling off, and instead of twiggy shoots, we have shoots 2 feet in length full of fruit spurs. Last year many of the trees produced fruit of good quality, and I am in hopes of seeing an annual improvement.—WM. TAYLOR.

## STOCKS FOR SPRING AND EARLY SUMMER.

My last letter (see page 439) was devoted principally to Brompton Stocks, finishing with a glance at Lothians and their preparation as pot plants. For this purpose few plants are finer, or will win more general appreciation, than these heavily-laden masses of bloom and perfume in winter and spring. To obtain large plants early they should, as previously stated, be sown in April or May on a gentle hotbed; yet small handy plants for pots, to flower in spring, will result from seed sown at the present time in rich soil, having the shelter of a bit of glass during a possible heavy downpour of rain, which is too much for

them in the young state. If seed could be sown by the ounce the precaution would be less called for; but as the vendors regard it as so precious, and try to sell as little as they can, the case is different, and we must lessen the risk of loss of even a few plants as much as possible.

The Lothian is, perhaps, the most useful type of Stock extant, and our good friends "over the border" are to be congratulated on its introduction. Its few and clearly-defined colours, its quality of producing a great proportion of doubles, its hardiness, and especially its long continuance in bloom, are its valuable attributes.

For ordinary purposes of out-door flowering, about the end of May or beginning of June is a good time to sow—that is, with those who have little or no glass accommodation to winter the plants in pots. In this case the plants should be grown-on as hardy as possible. If these or any other nearly hardy plants are left long in the seed bed and get weakened and drawn, or if they are planted out too thickly, or in over-rich soil, or in a position lacking a full sweep of air, or partially shaded by trees, then they are made more tender and badly prepared to withstand the frost and snow of winter, through which they are expected to pass unharmed. This class of Stocks is only hardy when made so by summer culture. They must be transplanted early on firm ground, and no approach to overcrowding must be tolerated. They must have the fullest exposure to the sun possible, and stand sufficiently wide apart that one can walk amongst them in autumn when nearly full grown without touching a plant. In fact, open-field rather than sheltered-garden culture is the most suitable preparation for the plants, and the nearer it can be approached the better. Grown like this, and replanted towards the end of October, most of them will stand the winter with little or no injury. I have lately seen some glowing bushes 2 feet high and through, which could not fail to strike the most casual observer. They were planted in the front of shrubbery borders, and had, and will for a long time continue to have, a fine effect. Yet wherever a few pots and a bit of glass can be afforded them, they are worthy of it.

If a portion of the early-sown Stocks are potted and set in the open air after the manner of Chrysanthemums during summer, they will, if duly attended to, show bloom in autumn, and a shift then into larger pots will carry them to perfection, and they will fill no unimportant place in indoor decoration, and will hold their own amidst more aristocratic things. Those potted-up in autumn and wintered in frames, with frost excluded, especially from the roots, will be fine for turning out in spring. A few weeks after potting it is necessary to go over them and remove the decayed leaves, of which they shed a good many, otherwise they invite mildew, and damage ensues. Beyond this and a very occasional watering, but little trouble is involved.—J. WRIGHT.

(To be continued).

## ROYAL HORTICULTURAL SOCIETY.

JUNE 4TH AND 5TH.

THIS was the principal summer Show of the Society, and for the number of the subjects exhibited and their general quality we have no hesitation in pronouncing it the largest and best show held this year in the metropolis. The very abundance of the materials caused the Show to be split up into two tents, the large one being full to repletion; and this no doubt somewhat detracted from the effect which it would otherwise have had. The weather being extremely fine, notwithstanding other attractions, there was a large attendance of visitors.

**STOVE AND GREENHOUSE PLANTS IN FLOWER.**—Of these there was a large display of good specimens of the usual kinds met with at the summer exhibitions, and generally they were in excellent condition both as regards quantity and freshness of bloom. The first class in the schedule was for twelve plants, and in this Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, took the lead with a collection which included a large plant of *Statice profusa* in fine bloom; a very good *Anthurium Scherzerianum*; *Dracophyllum gracile*; large, finely-bloomed plants of *Erica tricolor* Kingcotti, E. Candolleana, and E. Cavendishii; *Franciscea confertiflora*, *Genetyllis tulipifera*, and *Aphelexis macrantha rosea*. Mr. J. Wheeler, gardener to J. Phillpott, Esq., Stamford Hill, took the second place with a good collection, but not so even in size; and Mr. Kemp, gardener to the Duke of Northumberland, Albury Park, the third. In the next class, for eight (nurserymen only), Messrs. Jackson, of Kingston, carried off the chief honours, Mr. Williams, of Holloway, being second, the specimens in both cases being large and in excellent

bloom. In Mr. Williams's group *Azalea coronata* and *Iveryana* formed grand masses of bloom, and noticeable among the rest for size were *Phenocoma prolifera*, *Ixora coccinea*, *Anthurium Scherzerianum*, and *Epacris Eclipsae*. Mr. Morse, of Epsom, was third. In the amateurs' class for six plants Mr. Ward was again first, showing a plant of *Erica tricolor impressa* quite 4 feet in diameter; *Ixora amboynensis* with large heads; *Aphelexis macrantha purpurea*, fine; *Genetyllis Hookeri* and *tulipifera*, both good, but the latter small; and *Erica Cavendishii*. Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, came second with good plants of *Boronia tetrandra*, *Clerodendron Balfourianum*, and *Dracophyllum gracile*. The third place was taken by Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart., who had among others a well-flowered specimen of *Franciscea confertiflora*.

The next two classes were for eight plants in 12-inch pots respectively for nurserymen and amateurs, and many well-grown and flowered plants were exhibited in the different groups. Messrs. Jackson, Williams, and Morse were the prize-takers among the nurserymen, while Mr. Ward outdistanced all competitors in the amateurs' class, showing among others *Anthurium Scherzerianum* with immense spathe, and finely-bloomed examples of *Statice profusa*, *Aphelexis macrantha rosea*, *Erica ventricosa grandiflora*, and *Azalea Magnet*. Mr. Child, gardener to Mrs. Torr, Ewell, who was second, had a fine plant of *Clerodendron Balfourianum*. Mr. Kemp was third.

The greatest interest attached to the stove and greenhouse plants was that arising from the competition for the Davis prizes, the chief of which Mr. Baines last year carried off unopposed; and though in the present season, in consequence of Mr. Micholls' removal to town, the grand collection which existed at Southgate has been brought to the hammer, the plants selected for this competition by Mr. Baines were specially reserved for him by Mr. Micholls. Again Mr. Baines carried all before him, there being no plants by a long way approaching his. Foremost in his collection came a plant of *Ixora coccinea* fully 4 feet in diameter, bearing a profusion of grand heads; then a magnificent *Dipladenia amabilis*; a fine specimen of *Ixora aurantiaca*; *Franciscea confertiflora*, 3 feet in height; *Allamanda Chelsoni*; *Boronia pinnata*, 3½ to 4 feet through, and finely bloomed; and wonderful plants of *Bougainvillea glabra* and *Clerodendron Balfourianum*. All were admirably bloomed. Mr. W. Cutbush, of Barnet, had excellent plants for their age of *Boronia serrulata* and pinnata, *Dracophyllum gracile*, *Clerodendron Balfourianum*, *Franciscea confertiflora*, *Phenocoma prolifera*, and two plants of *Genetyllis tulipifera*, one under the name of *Hedera*, and the other of *Genetyllis*, a circumstance which probably lost him the second prize, which went to Mr. Kemp, gardener to the Duke of Northumberland, Albury Park, who had, however, very good plants of *Genetyllis tulipifera*, *Erica Cavendishii*, *Dracophyllum gracile*, *Acrophyllum venosum*, &c.

**ORCHIDS.**—Although these were not very numerous, they were very good. There were two classes for twelve, the one for amateurs, the other for nurserymen, and, as might be expected, in these the leading exhibitors put out their strength. Mr. Ward took the lead among amateurs with a fine potful of *Phalenopsis grandiflora*, with nine spikes; *Aërides Lobbi*, fine; *Odontoglossum Alexandrae*, Bluntii, and *Phalenopsis*; *Lycaste Skinneri*, *Phalenopsis Schilleriana*, *Cattleya Mossiae superba*, and *Oncidium ampliatum*. Mr. F. Rutland, gardener to the Duke of Richmond, Goodwood, came next with *Cattleya Mossiae magnifica*, a superb mass of bloom, and 2½ feet in diameter; *Cypripedium caudatum* with five flowers, the Foxbrush *Aërides*, *Aërides crispum*, *Brassia cordata*, and *Oncidium sphacelatum majus*. The third prize went to Mr. J. Douglas, gardener to F. Whitbourn, Esq., whose group, though consisting of smaller plants than those just noticed, bore the impress of thoroughly good cultivation, and one plant in it, *Masdevallia Harryana* with ten or more flowers dazzling in their brightness, was the guiding star to the Orchids. Other plants there were of the same species in the Exhibition, but none equal to it at once in brightness, freshness, and profusion of bloom. The remainder of the group consisted of a good *Oncidium Lanceanum*, *Phalenopsis grandiflora*, *Odontoglossum crispum*, *Cattleya Warneri*, fine; *Dendrobium formosum giganteum* with very large flowers, *Cypripedium superbum Veitchii*, *C. barbatum nigrum*, *Dendrobium Benaoniae*, very good, and *Lælia purpurata*, with one or two others. Among nurserymen Mr. Williams occupied the place of honour, showing a splendid mass of *Cattleya Mossiae superba*, *Odontoglossum citreolum roseum* with four fine spikes, *Lælia purpurata* and *Bryasiana*, *Orchis foliosa*, fine, *Aërides affine superbum*, *Saccabium retusum*, and others. The most notable in the group from Mr. Bull, which came next on the prize list, were *Odontoglossum Roezlii*, *Cattleya Mendelii*, and *Cypripedium Parishii*. Mr. Morse, of Epsom, was third. The next class was open both to nurserymen and amateurs. Here Mr. Williams was again first with *Lælia purpurata* with large and fine flowers, *Masdevallia Harryana*, past; *Dendrobium densiflorum*, very fine; a large mass of *Cypripedium barbatum superbum*, *Cattleya*

*Mossia aurea* with a profusion of fine flowers, and *Vanda tricolor insignis*. Mr. Ward was first in the amateurs' class for six, with good examples of *Masdevallia Harryana*, and *Phalenopsis grandiflora*; Mr. Child second with a fine mass of *Lycaste aromatica*, *Oncidium ampliatum majus*, and *Trichopilia suavis*.

**AZALEAS.**—The only exhibitor in the nurserymen's class for eight was Mr. Williams, who had immense specimens of *Criterion* and others; while in amateurs' sizes Mr. Child was first, and for fifteen the first prize was withheld, and a second one awarded to Mr. G. Wheeler. None of the groups were remarkable for profuse bloom.

**HEATHS.**—Respecting these we must note that as usual the specimens of Messrs. Jackson, of Kingston, Mr. Ward, and Mr. J. Wheeler were excellent, including fine examples of *E. tricolor Wilsoni*, *dumosa*, and *superba*; *ventricosa* varieties; *Cavendishii*, &c. The awards went to the exhibitors just named, Mr. Morse, Mr. Kemp, and Mr. G. Wheeler.

**ROSES.**—The competition was confined to Messrs. Paul and Son and Mr. Turner, of Slough, the former being first. The specimens were good, but wanting that freshness which characterised those shown in such perfection by the same exhibitors in May. *Souvenir d'Elise*, *Victor Verdier*, *Madame Margottin*, *Miss Ingram*, *Middle Marie Rady*, *Dupuy-Jamain*, *Juno*, and *Monsieur Woolfield*, however, were excellent.

**PELARGONIUMS.**—These did not come up to the grand specimens we have seen in former years. The best eight *Show Pelargoniums* exhibited came from Mr. Ward, Leyton, Rob Roy and Mary Hoyle being the finest specimens. Mr. James, gardener to W. F. Watson, Esq., Isleworth, was second with well-bloomed plants, but rather small; and Mr. Weir, gardener to Mrs. Hodgson, third. Among nurserymen Mr. Turner had a second prize, and Messrs. Dobson a third for the same number; and for six *Fancies* Mr. Turner had first honours for *Eleanor*, *Neatness*, *Acme*, *Victor Hugo*, *Ellen Beck*, and *Fanny Gair*, excellently grown and flowered. Messrs. Dobson were third. In the corresponding class for amateurs the prizes went to Messrs. James, Weir, and Donald. *Ellen Beck*, *Princess Teck*, *Roi des Fantaisies*, *Lucy*, and *Fanny Gair* from the first-named were extremely good, and Mr. Weir's was also a very good group.

**FINE-FOLIAGED PLANTS.**—There was a very large display of these, and among them were many remarkably fine specimens. First in order in the schedule came a class for twenty in 12-inch pots. Here Mr. Bull was first with a choice collection, in which we noticed *Diefenbachia Bausei*, *Curculigo recurvata variegata*, a handsome specimen of *Cycas imperialis*, the hybrid *Nepenthes Dominiana*, and *Pandanus Veitchii*. Messrs. Rolleston, of Tooting, were second, and Mr. Williams third, with excellent groups. In the classes for nine plants, as might be expected, the specimens were much larger, and many of them were extremely handsome. In the nurserymen's class Mr. Williams was first, showing among others very fine plants of *Gleichenia spelunce*, *Cycas revoluta*, *Dasylirocn acrotrichum*, and *Pandanus ornatus*. Messrs. Jackson & Son were second, and Mr. Aldous, Gloucester Road, South Kensington, third. Among amateurs Mr. J. Hudson, gardener to J. C. Inthurn, Esq., Champion Hill, Camberwell, took the lead with a noble specimen of *Phoenicophorum sechellarum*, *Zamia villosa*, very handsome; *Cyathia dealbata*, *Areca sapida*, *Chamaecrops humilis*, and *Croton pictum*, finely coloured. Mr. Donald, Leyton, who took the second place, had *Alocasia zebrina*, *Cycas circinalis*, a large *Pandanus elegantissimus*, and *Alocasia metallica*, all in fine condition. Mr. Sheen was a very good third. From T. M. Shuttleworth, Esq., Howick Hall, Preston, came a fine group, in which we especially noticed *Nepenthes Raflesiana*, a *Sarracenia*, *Cocos Weddelliana*, and *Croton undulatum*.

**Palms** in 8-inch pots were shown by Mr. Wimsett, Mr. Bull, and Mr. Aldous, and among them were most of the new kinds, and many of those which are considered the most ornamental for table decoration. For large specimens Mr. Williams was first in the nurserymen's class, and Mr. J. Fewell in that for amateurs, Mr. Croucher being second, and Mr. Cole third. The best six *Crotons* came from Mr. Bull, and consisted of *C. majesticum*, *C. Weismannii*, *C. Youngii*, *C. undulatum*, *C. Veitchii*, and *C. spirale*, all of which were in excellent condition. Messrs. Rolleston were second with *C. Johannis*, *Hookeri*, *irregularis*, and some of those already named. For six *Dracenas* and *Cordylines* the prizes went to Messrs. Bull, Wimsett, and Rolleston. The group from the first-named consisted of *D. Goldiana*, *Baptistii*, *amabilis*, *Cheltoni*, *Mooreana*, and *Fraseri*, well grown and finely coloured.

**FERNS.**—The specimens of these, both large and small, were almost without exception in excellent condition, notably those from T. M. Shuttleworth, Esq., who took the highest position in the amateurs' class for eight, and which comprised fine specimens of *Gleichenia flabellata* and *rupestris*, *Todea superba*, *Cyathia princeps* and *medullaris*, *Cibotium regale*, and *Leucostegia immersa*, over 4 feet in diameter. Good groups from Mr. Donald and Mr. Cole, gardener to J. Budgett, Esq., Ealing Park, were second and third. In the nurserymen's class Mr.

Williams was first with fine plants of *Adiantum farleyense*, *Todea superba*, *Gleichenia rupestris* and *flabellata*, and *Cibotium regale*. Mr. Aldous was second. For four large tree Ferns Mr. Williams was first with a pair of *Dicksonia antarctica*, standing 12 feet high; *D. squarrosa*, and *Alsophila Leichardiana*. The best pair in the amateurs' class came from Mr. Sheen. The best group of twelve Hardy Ferns was that from Messrs. Ivery, of Dorking; Mr. Stone, gardener to C. Walton, Esq., and Mr. R. Parker, Tooting, also showing well.

**NEW PLANTS.**—There were several classes for these, and there was a large display of subjects the majority of which have been previously noticed in our columns. The first class which occurred for them in the schedule was for twelve plants (*Orchids* excluded), in or out of commerce, those in commerce sent out in 1872, 1873, or 1874. Here Mr. Bull, of Chelsea, took the first place with *Pritchardia grandis*, a handsome Palm; *Kentia Moorei*, *Croton majesticum*, richly tinged with red, *C. Weismannii*, *Dracena amabilis*, *Aralia Veitchii*, *Campsidium filicifolium* (see page 366), *Phyllanthum Lindenii*, *Anthurium crystallinum*, *Maranta Makoyana*, *Dipladenia Brearleyana*, with splendid cinnabar flowers, and *Adiantum peruvianum*. Mr. Williams was second with *Macrozamia spiralis*, *Dracena imperialis*, *Adiantum gracillimum*, *Cyathia Dregelii*, *Dracena Lindenii*, *D. Shepherdii*, *Bromelia Benotii*, with red-stained leaves, an *Alsophila* with a pendulous head on a thick trunk, *Ficus Parcelii*, and *Gloneria jasmiflora*. Messrs. Rolleston were third, with among others *Croton Youngii*, *Aralia Veitchii*, *Hypolepis Bergiana*, and *Ficus Parcelii*. In the next class, for six (*Orchids* excluded) in or out of commerce, Mr. Bull was again first, taking the gold medal for *Pritchardia grandis*, *Dracena Goldiana*, *Dipladenia Brearleyana*, *Croton majesticum*, *C. spirale*, and *Maranta leopardina*. A silver medal was also offered, but there was no competition. For three new plants Mr. Bull again was unopposed, taking a silver medal for *Dracena Goldiana*, *Croton majesticum*, and *Dipladenia Brearleyana*, which is truly a magnificent, intense-coloured flower, and, moreover, it appears to be a profuse bloomer.

Mr. Bull offered prizes for twelve new plants introduced and sent out for the first time since the commencement of 1871, and announced by him in his catalogue, separate classes being reserved for amateurs and nurserymen. Of the former, T. M. Shuttleworth, Esq., was first with *Demonorops palembanicus*; *Cyathia Burkei*, a splendid plant with a 4-foot stem; *Macrozamia corallipes*, very fine; *Pandanus Veitchii*, *Encephalartos villosus amplius*, *Vriesea reticulata*, *Macrozamia spiralis*, *Dracena Shepherdii*, and *D. Fraseri*. Mr. Croucher, gardener to J. Peacock, Esq., Hammersmith, was a good second, and Mr. Comber, gardener to Lieut.-Col. Wilkinson, Highgate, third. In the nurserymen's class, Mr. Wimsett, the only exhibitor, took a first prize.

**MISCELLANEOUS.**—Foremost in the Miscellaneous class was a beautifully arranged and extremely choice group of plants from Messrs. Veitch, of Chelsea, filling a large circle in the centre of the tent, and forming one of the principal attractions of the Show. Although the firm did not compete for prizes in the classes for new plants, &c., this group included a considerable number of their recent introductions and many fine specimens of plants longer in cultivation. A large silver medal was awarded. Mr. Bull and Mr. Williams had small silver medals for collections of plants; Mr. Turner one for *Pelargoniums*; and Messrs. Downie a bronze medal for a group of fine-foliaged plants. A class was provided for succulents, in which Mr. Croucher took the first place with a collection containing several interesting species; Mr. Pferdorff, 73, South Row, Kensal New Town, being second. For *Pyrethrums* and hardy perennials, as well as for *Paeonies*, Mr. Parker, of Tooting, carried off all the leading prizes, also that for twelve bunches of cut blooms of hardy herbaceous plants. Mr. Noble, of Sunningdale, contributed a group of the charming rose-flowered *Spiraea palmata*; Messrs. Standish, of Ascot, *American Tuberoses*; Messrs. Hooper & Co., double *Anemones*, *Ixias*, &c.; Messrs. Cutbush, Ivies; Mr. Turner, *Tricolor Pelargoniums*, and pink and blue-flowered *Hydrangeas*; Messrs. Barr and Sugden, *Irises*; Messrs. Carter, a group of *Dracenas* and *Crotons*, also one of *Tricolor* and *Bronze Pelargoniums*; Mr. Young, *Godalming*, a number of small plants of his *Golden Chinese Juniper*; and lastly, Messrs. Jackson, a basketful of eight plants of *Saxifraga nepalensis*, forming charming pyramids of white flowers, and 18 inches high. This plant is further noticed on page 470.

#### FRUIT.

It is many years since such an extraordinary collection of fruit has been staged at South Kensington so early in the year.

First in order in the schedule were the Pine Apples, and these like the Grapes, had been wisely arranged in classes. For two Queens, Mr. T. W. Bond, gardener to G. A. Smith, Esq., Weybridge, was first with well-ripened examples, weighing in the aggregate about 9 lbs. Mr. J. Gray, Grange Park, Alresford, Hants, was second, and Mr. F. Rutland third. For two Smooth-leaved Cayennes, Mr. T. Jones, Royal Gardens, Frogmore, was

first with large fruit. Mr. G. T. Miles, gardener to Lord Carington, Wycombe Abbey, Bucks, was second, and Mr. F. Rutland, third. For one Pine Apple of any other variety, Mr. J. Tonkin, gardener to T. Kekewich, Esq., Peamore, near Exeter, was first with a well-ripened Prickly Cayenne. Mr. T. W. Bond was second, and Mr. F. Rutland third.

**GRAPES.**—There were seventeen dishes of Black Hamburgs staged, and not an inferior dish amongst them. Mr. J. Douglas, gardener to Francis Whitbourn, Esq., Loxford Hall, Ilford, was in the first position with exceedingly fine bunches; the berries large, hammered, jet black, and covered with bloom. Mr. A. Johnson, gardener to the Marquis of Ailesbury, Savernake, Marlborough, was second; equal third prizes being awarded to Mr. W. Bones, gardener to D. McIntosh, Esq., Havering Park; and Mr. W. Coleman, gardener to Earl Somers, Eastnor Castle, Ledbury. All the dishes were exceptionally fine. Prizes were offered for Black Prince Grapes, and two dishes were exhibited, but the prizes were withheld. For any other Black kind, Mr. G. Parkhouse, gardener to T. Holman, Esq., Hawkhurst, exhibited Madresfield Court Black; the berries were wanting in colour, but a second prize was awarded.

In the class for Muscat of Alexandria, Mr. J. Maher, gardener to C. Alhussen, Esq., Stoke Court, Slough, had the first prize; his bunches were not perfectly finished, but good for the season. Mr. J. Douglas was second. Mr. Bones and Mr. W. S. Stevens also exhibited, but their bunches were unripe. For three bunches of Buckland Sweetwater the prizes went to Mr. Cole, Ealing Park; Mr. Douglas, and Mr. A. Johnson. For any other White kind, Mr. J. Douglas was first with Canon Hall Muscat, the berries fairly coloured and of immense size; Mr. J. Parkhouse second with Bowdow Muscat; and Mr. D. Pizzey, gardener to Sir E. Perry, Slough, third, with Royal Muscadine. In the class for three bunches of Frontignan, in each case the White variety was exhibited; Mr. Douglas was first with Loxford Hall Frontignan; the bunches and berries were large. Mr. Coleman was second, and Mr. E. Clarke, gardener to Mrs. J. R. Hall, Sutton, Surrey, third.

Of Peaches twelve dishes were exhibited; the fruit was not so large as we have seen, nor was it highly coloured. Mr. W. Coleman, gardener to Lord Somers, Eastnor Castle, Ledbury, was first with Noblesse; Mr. J. Brown, gardener to Earl Howe, Gopsall Hall, Atherstone, was second; Mr. G. Sage, Ashridge Gardens, Berkhamstead, third with Royal George.

Nectarines were poor. Mr. J. Maher was first with Hunt's Tawny; Mr. W. Gardiner, gardener to E. P. Shirley, Esq., Stratford-on-Avon, second with Violette Hâtive; and Mr. J. Stephenson, gardener to F. C. Barker, Esq., third with Impératrice.

Four excellent dishes of Brown Turkey Figs were exhibited. Mr. Sage made an unfortunate mistake in the number of fruit, twelve being required, whereas he only staged nine, otherwise he would have had a place on the prize list. Mr. G. T. Miles was first, Mr. W. Coleman second, and Mr. J. Gray, Grange Park, Alresford, third.

Excellent Black Circassian Cherries were sent by Mr. G. T. Miles and Mr. P. Jones, who took the prizes in the order named. Mr. Jones was first for White Cherries with Frogmors Early Bigarreau, the fruit highly coloured and beautifully mottled and spotted. Mr. Miles was second with Elton.

Mr. Douglas had the best Strawberries of the British Queen or Dr. Hogg type. Mr. G. Sage was second, and Mr. Pizzey third. The best fruit of the Sir J. Paxton or Sir C. Napier type were sent by Mr. Pizzey; Mr. Douglas second with President; Mr. Sage third with the same variety.

A dozen and a half of Melons were staged. Jobson's Hybrid Greenflesh from Mr. Jones was first; Victory of Bath from Mr. Douglas second; and the same variety from Mr. Coleman third, Mr. Pizzey had the best Scarlet Gem; Mr. F. Bates, Appleby Hall, Atherstone, second with the same variety; Mr. J. Gray, Grange Park, Atherstone, third with Royal Ascot.

Prizes were offered for pot Vines. Mr. Pizzey exhibited two pots of Foster's White Seedling with six nice bunches on a plant, and had a first prize.

In the Miscellaneous class Mr. Jones had a prize for eighteen nice dishes of Apples; and Mr. C. Ross, gardener, Welford Park, Newbury, one for Apples and baking Pears. A prize was also given to Mr. Sage for a fine cluster of Bananas weighing 74 lbs. Mr. J. Richards, gardener to Baron Rothschild, Basing, also exhibited a small collection of fruit.

#### VEGETABLES.

The only prizes for these being those offered by Messrs. J. Carter & Co., of High Holborn, for Peas, the competition was confined to that legume. Mr. Pragnell, gardener to G. D. Digby, Esq., Castle Gardens, Sherborne, was first with the sort specified by Messrs. Carter—namely, Carter's Extra Early Premium Gem, Maclean's Blue Peter, Carter's White Gem, and Carter's First Crop Blue. Mr. G. Brown, gardener to E. McKenzie, Esq., Henley, was second. Mr. Miles, gardener to Lord Carington, had an extra prize for two boxes of Tomatoes.

the chair. Mr. Louis L'Hérault, of Argenteuil, near Paris, sent some very large Asparagus from his famous cultures, and received for it a cultural commendation. From Messrs. Osborn and Sons, Fulham Nurseries, came a Cucumber, a cross between Sion House Improved and Telegraph, but it was not considered better than existing varieties. Mr. Miller, Southdown Nursery, Shoreham, sent a Broccoli called The Czar, which the Committee pronounced to be similar to Leamington, certificated last year. Mr. Gardner, Elsham Hall Gardens, Brigg, exhibited a seedling Melon, which, being not quite ripe, is to be seen again. Another Melon, called Eastnor Castle, came from Mr. W. Coleman, gardener to Lord Somers, Eastnor Castle; this proved very good, and it was requested that it should be again submitted to the Committee. Mr. Gray, gardener to Lord Ashburton, The Grange, Alresford, also sent a seedling Melon, which was passed. Mr. Ross, gardener to C. Eyre, Esq., Welford Park, Newbury; and Mr. Jones, gardener to Her Majesty at Frogmore, contributed dishes of well-preserved Apples.

**FLORAL COMMITTEE, June 4th.**—W. B. Kellock, Esq., in the chair. A first-class certificate was awarded to Messrs. Veitch for *Sarracenia Stevensii*, a hybrid between *S. flava* and *S. purpurea*, raised by Mr. Stevens, at Trentham. A similar award was made to Mr. Williams, of Holloway, for *Vanda limbata*, with brown sepals and petals, and a lilac-rose lip. Mr. W. Bull, of Chelsea, had also first-class certificates for *Dendrobium amoenum*, white, tipped with purple, very pretty and sweet-scented; and for *Macrozamia plumosa*.

Messrs. Cripps & Son, Tunbridge Wells, exhibited *Clematis purpurea elegans*, with deep violet flowers, and were awarded a first class certificate. A similar award was made to Mr. Gee, gardener to W. Lovell, Esq., for *Gloxinia Queen of England*, with an extraordinarily large flower, white with a purplish-crimson throat. W. Laxton, Esq., of Stamford, had a first-class certificate for double scarlet *Pelargonium Emily Laxton*; and Messrs. Backhouse, of York, had also first-class certificates for *Pellaea mucronata*, and an unnamed species.

Mr. Ware, Hale Farm Nurseries, Tottenham, sent collections of cut Pansies, Peonies, and Pyrethrums; and Mr. R. Barr, of Lilies. Several varieties of Zonal *Pelargoniums* were shown, but they were not considered of superior merit to existing kinds.

#### THE BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY'S SHOW.

THIS ought properly to be called an Exhibition of Industry and Art, for there is such a range of subjects embraced in what is meant by the Bath and West of England Show, that though agriculture is the primary object, encouragement is given also to other useful arts. Next to agriculture the Society gives the greatest encouragement to horticulture, and the way in which this is done is peculiar. No schedules are issued, and no prizes are offered, and the management is placed in the hands of a member of the Society, who is designated Steward of Horticulture. To this gentleman a *carte blanche* is given to work out the department after his own ideas, and to be held responsible for the success or the failure of it. The gentleman who has for many years held this responsible post with so much advantage to the Society and to horticulture is the Hon. and Rev. J. T. Boscawen, himself an ardent horticulturist, and one who knows how to grow or judge a plant with anybody. The system adopted in getting the Show together is that of "a loan collection." Mr. Boscawen, who is so well known in these parts, exercises a peculiar charm over the possessors of horticultural treasures, inasmuch that people who never exhibit at ordinary shows, and who reserve their plants for their own private enjoyment, yield to his fascinations, and willingly contribute for the benefit of the Society and of the public. The effect of this plan is that the plants are not arranged in classes as at ordinary shows, and are therefore placed so as to produce the most pleasing effect. No doubt there is a great advantage in this respect, for there need be no jarring in form or colour.

Then as regards prizes; none are offered, and yet there is a fine show. The Society appropriates an amount of money to this department, and Mr. Boscawen executes the office of Judge. He receives and places every plant himself. We saw him engaged at it, and we saw exemplified when a man's heart and soul are in his work how well it goes, and how briskly and cheerily all who are engaged in it work with him. After having handled every plant, studied its form, outline, and growth, Mr. Boscawen as a plant-grower himself has a pretty shrewd notion how much of the sum allotted for the whole ought to go to each contributor, and so he apportions to each the amount to which in his estimation he is entitled. This plan has hitherto worked well.

**FRUIT COMMITTEE, June 4th.**—Alfred Smee, Esq., F.R.S., in

This Show, which opened on Monday last and will be continued during the week, is held in a spacious tent—long, wide, and lofty. The arrangement is a high bank down the middle, a wide path on either side, and then a border all round the sides and end, where some of the plants are placed on the ground, while others are raised on benches, according as they can be best exhibited. In so large an Exhibition, and considering that no prizes are directly offered, it is marvellous to see so many well-grown plants. They are not the monsters one sees at the metropolitan exhibitions, which too often deter rather than encourage modest amateurs from becoming plant-growers; but they are well-grown plants of moderate size, such as would encourage the faint-hearted, and induce them to reach a standard which is in every way worthy of imitation. The advantages obtained from the promiscuous arrangement over the class system is that it permits an artistic grouping of the whole in respect of form and colour. It is upon this plan that the continental exhibitions are managed, to the great discomfiture of the judges, who have to wander about in search of the "entries" in the different classes. But however inconvenient it may be in this respect, there cannot be a doubt that it has its advantage in the way of grouping for effect.

Then there is another advantage Mr. Boscawen possesses. For a twelvemonth before the Exhibition is held he is scouring the country in search of specimens. He calls on friends and adherents, of whom he has many, and when he sees a specimen plant for which in his mind's eye he sees a place in the future show, he says, "Can I have this?" "You must let me have that." "What a fine effect that *Seafortia* and that *Dicksonia* would have in my Exhibition next year, if you would only let me have them." "Have them, of course; have anything you require," is the prompt reply, and so the Show is got together. Let us now see of what it is composed, but before doing so we shall record the names of those gentlemen and their gardeners who have contributed so liberally to the success of the Show, and these are—

W. Proctor Baker, Esq., Bristol (Mr. Morse, gardener); W. S. Gore-Langton, Esq., Newton Park (Mr. Keele, gardener); P. W. S. Miles, Esq., King's Weston (Mr. Toucher, gardener); T. W. Miles, Esq., Penpole (Mr. W. Perry, gardener); Mrs. Carew, Crowcombe Court (Mr. May, gardener); W. E. Brymer, Esq., Puddleton, Dorchester (Mr. Salford, gardener); Sir W. Marriott, Down House, Blandford (Mr. J. Hill, gardener); Mrs. Goldsmith, Clifton (Mr. Rudland, gardener); Joshua Saunders, Esq., Clifton (Mr. Phillips, gardener); C. Tagart, Esq., Sueyd Park (Mr. Miller, gardener); R. S. Holford, Esq., Westonbirt (Mr. Lucas, gardener); Henry Tagwell, Esq., Bath (Mr. Carmichael, gardener); Lord Ducie, Tortworth Park (Mr. Cramb, gardener); J. Lucas, Esq., Redland Bank (Mr. Harwood, gardener); V. Ames, Esq., Cote House (Mr. Bannister, gardener); G. T. Weston, Esq., Dorset House, Clifton (Mr. Thomas, gardener); — Oldland, Esq., Avon Grove, Stoke Bishop; Messrs. Parker & Bush, nurserymen, St. Michael's Hill, Bristol; Messrs. Bryant & Hoskins, nurserymen, Brislington.

The plants which make the greatest show in outline and foliage are, of course, the Tree Ferns, the Palms, and the Cycads. Of these we remarked a fine specimen of *Cycas circinalis*, contributed by Mrs. Carew, Crowcombe Court. It was the first on the ridge of the bank, and formed a good solid starting-point, and it was flanked by good specimens of *Latania rubra* and *Dracæna australis* from the same garden. The Tree Ferns of Mr. P. W. S. Miles, which included *Cyathea Smithii* and *Dicksonia*, and those of Mr. G. W. Miles, including a fine pair of *Cyathea dealbata*, were very effective; and then there were *Areca Baueri*, *Dicksonia antarctica*, and *Latania aures*, contributed by Mrs. Carew. These were on one side, and at the end the ridge was terminated by a fine *Stevensonia grandifolia* sent by Mrs. Goldsmith; and interspersed among the collection were a good specimen of *Pandanus Vandermeerschii* by Messrs. Parker & Bush, *Latania borbonica* from Mr. Joshua Saunders, *Seafortia elegans* from Mr. Tagart, and a fine *Cycas revoluta* from Messrs. Parker & Bush.

Crotons were admirably represented in the specimens of variegatum sent by Messrs. Parker & Bush, of Mrs. Goldsmith, Mr. Lucas, and Mr. P. W. S. Miles. A fine plant of *C. pictum* came from the last-named gentleman, and good plants of *C. interruptum* and *undulatum* came from Mr. Lucas. In *Dracænas* some good plants were exhibited, especially a well-grown *D. Reginæ* from Mr. Tagart, *ferrea grandis* and *nigrescens* from Messrs. Parker & Bush, *ferrea variegata* from Mr. P. W. S. Miles, and a splendid *Mooreana* from Mrs. Goldsmith.

Some of the old-fashioned exhibition plants made a very creditable appearance, especially the *Erica Cavendishii* of Mr. Weston, of Dorset House, Clifton; the *Pimelea mirabilis* of Mr. W. P. Baker, the *Aphelexis macrantha purpurea* of Messrs.

Parker & Bush, *A. sessamoides* and *macrantha purpurea* of Mrs. Goldsmith, and *A. macrantha purpurea* of Mr. C. H. Tagwell.

Messrs. Parker & Bush had a very handsome specimen plant of *Anthurium Scherzerianum*, with about thirty-six blooms upon it, and smaller plants came from Mr. Joshua Saunders. There were a few good plants of *Marantas*, of which Mr. Lucas sent *rosea lineata* and a very excellent specimen of *M. Veitchii*. *Allamandas*, *Ixoras*, and *Bougainvilleas*, *Heaths*, *Roses*, and *Gloxinias*, interspersed among the larger plants, furnished bits of colour where wanted. Various specimens of *Clerodendron Balfourianum*, well bloomed and well grown balloon fashion, were worthy of notice, and these were sent by Mrs. Carew and Messrs. Bryant & Hoskins, Avon Vale.

The end of the long central bank, which we have already described as being terminated by Mrs. Goldsmith's *Stevensonia grandifolia*, was a very fine bit of grouping, due, in a great measure, to the tasteful disposition of five fine specimens of *Adiantum farleyense*, the delicate fronds of which waved in graceful undulations one above another. These were contributed by Mr. W. P. Baker, Mr. J. Saunders, and Mr. P. W. S. Miles. In the front centre of the group was a fine specimen of *Nepenthes Hookeri*, sent by Messrs. Parker & Bush; on either side of this was a pot of *Cattleya Mossie*, sent by Sir W. Marriott and Mr. W. S. Gore-Langton respectively. Above the *Nepenthes* a fine plant of *Odontoglossum Alexandræ* from Mr. J. W. Miles; then above this a large plant of *Adiantum farleyense*. Between the *Adiantum* and the *Stevensonia* on one side a fine specimen of *Lilium auratum*, produced thus early by the Hon. and Rev. J. T. Boscawen, and on the other *Dendrobium aduncum* from Mr. Tagart. Interspersed among the group were *Calanthe veratrifolia*, *Anguloa uniflora*, *Cypripedium Veitchii*, a fine *Vanda tricolor* from Mr. Gore-Langton, *Oncidium papilio*, and a remarkably well-flowered *Odontoglossum citrosimum* from Mr. J. W. Miles.

The great attraction of the Show was certainly the splendid *Azaleas* of Mr. W. P. Baker, of which there was a group of five noble plants, a mass of bloom. The plant of *A. Gledastessii* was not less than 6 feet high, as was also *Criterion*. They reminded one of the grand specimens that used to be exhibited at the London shows, but which have of late years disappeared.

Orchids were remarkably well represented; indeed, we do not remember to have seen so many and so well-bloomed plants at any provincial show. The gem of the collection was the grand *Saccolabium guttatum* of Mr. Gore-Langton. It is the same plant which was exhibited at South Kensington. Then in the collection of the same gentleman were *Saccolabium curvifolium*, *Dendrobium Jamesianum*, *Aërides Warneri*, *Oncidium ampullaceum major*, *Cattleya Mendelii*, and *Maxillaria tenuifolia*. Sir W. Marriott, of Down House, Blandford, also sent a nice collection, among which were *Vanda suavis*, *Aërides affice*, *Cattleya Mossie*, *Odontoglossum Bluntii*, a fine plant of *Utricularia montana*, *Cattleya Mendelii*, *Odontoglossum Alexandræ*, *Batemanian grandiflora*. In this collection there was also a fine pot of *Drosera capensis*. Mr. J. W. Miles sent an excellent plant of *Dendrobium citrosimum*, and also *Odontoglossum nebulosum*, *O. Phalenopsis*, *O. Pescatorei*, *O. Lindleyanum*. Mrs. Carew had a fine pan of *Cypripedium barbatum*, a fine *Lælia purpurascens*, and *Oncidium crispum*. Mr. Brymer, of Puddleton, near Dorchester, had some very fine things, among which were *Odontoglossum Alexandræ*, *Cattleya Mossie*, *Epidendrum prismatocarpum*, *Masdevallia Harryana*, a good pan of *Cypripedium barbatum*, and a well-grown plant of *Cypripedium purpureum*. Rev. W. Hunt, Congressbury, sent a tray of *Maréchal Neil* *Roses*, remarkable for size, form, and colour; they were deep golden yellow. Mr. Edwards, gardener at Pentilly Castle, Saltash, had blooms of a pure white erect *Gloxinia*, which has been named *Miss Coryton*. It is a fine pure white, even in the throat, of good substance, and will make a useful plant for wedding breakfasts and bouquets.

ROYAL BOTANIC SOCIETY'S SHOW.—The second summer Exhibition was held yesterday, and though probably not a tithe of the number of plants shown at Kensington in the previous week were staged—and the best of them had appeared there—the effect of the whole was excellent. We have not space to enter into details; and we may add, that although on this occasion no encouragement was offered for fruit, on the next (the 24th inst.) several classes are provided for its fair representation.

## THE BEAUTIFUL AND USEFUL INSECTS OF OUR GARDENS.—No. 20.

THOUSANDS, nay, millions of beetles, are rejoicing in the approach of summer, and busying themselves in obtaining food, or else in providing for the appearance of another generation. This statement is not intended to be alarming. Of our very numerous species of British beetles there are some, certainly, that work damage in the garden or orchard, but

then, again, we have many friends amongst them; and a host must be ranked as merely neutrals, interfering in no way with horticulture. No doubt the name has an objectionable ring about it, because we so associate it with the house pest known as the black beetle, not properly a beetle at all. I must acknowledge to some measure of faith in Johnson's Dictionary—it may be a weakness of mine, but so it is—and when I went, anxious to ascertain why some insects had the name of "beetle" applied to them, and also how that word is also used to designate a heavy instrument, I did not find the lexicographer communicative, only the inference suggests itself that in both there is some association with the earth. The living insect called "beetle" runs on the earth or delves in it; the wooden beetle strikes the earth. According to Johnson a "beetle-headed" man is a stupid man, which makes an uncomplimentary insinuation regarding the insect's character. Then as to "clocks"—for by that name in some countries they

know the black beetle or cockroach, and also other darkling species, such as *Blaps mortisaga* and *Staphylinus olens*—how is that to be explained? These insects do not tick, or they might deserve the appellation as well as the "death-watch," which frequents walls. Probably the word either applied to their hard cases, or else to their habit of skulking in dark places, not always because they have anything to be ashamed of; for some of those beetles or "clocks" fond of hiding themselves are useful to us. We may say they "do good by stealth, and blush to find it fame." I suppose, however, their grand object in keeping themselves out of view is to enable them the better to surprise their prey, which they will hunt down, sometimes with great swiftness, usually with dogged determination.

There is a group of beetles sometimes designated as the "Sunshiners," since they are occasionally to be seen actively pursuing their prey along paths and by roadsides during the day; but this is not the habit of all, as some of the family are



Fig. 1.—*Carabus violaceus*.\*

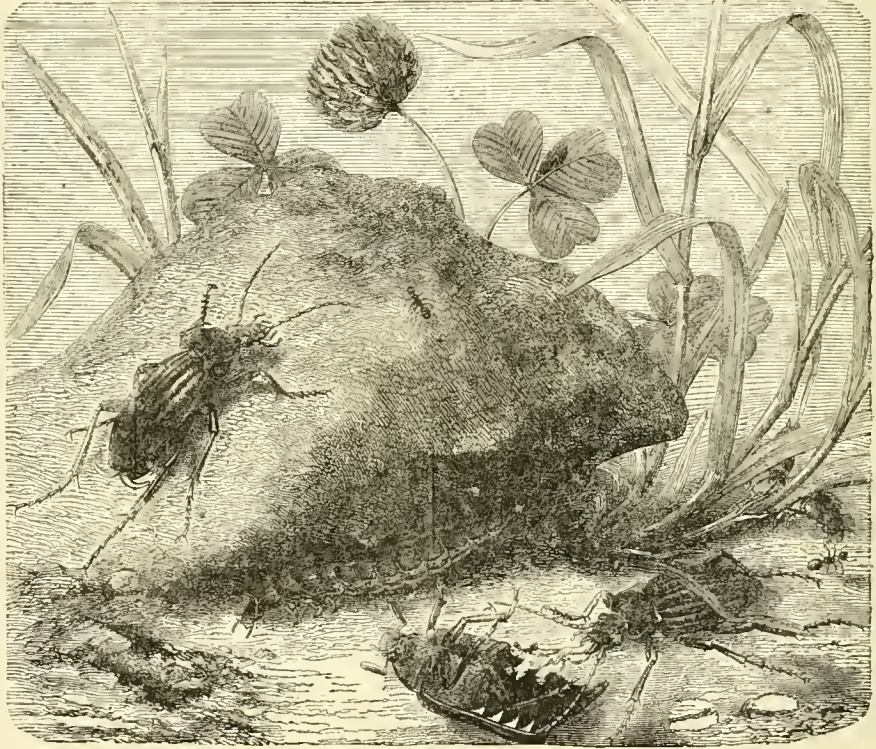


Fig. 2.—*Carabus auratus*.†

nocturnal in their habits. The larvæ, as predacious in their way as the perfect insects, also almost invariably hide from view; and though they may seem not very agile in their movements, yet as the immature condition lasts a good while in most of the species, they manage in that time to destroy a large number of other insects and small molluscs, most of which are pests to the gardener. The division of the Geodephaga, as it is called in science, comprehends what have been said to be, by comparison, the lions and tigers of the realm of insects, and the Carabidæ are prominent among these ravenous land beetles, and particularly noticeable at this season of the year. The build of one of these, as we take it up for examination, would at once give a clue to its habits. The limbs so well adapted for running, and in certain species also for digging, the prominent eyes and long antennæ, and the hard elytra or wing-cases, all suggest combativeness, and the life of a predacious wanderer. Yet it is singular that some of the large and powerful beetles, such as *Carabus violaceus* (fig 1), may be discovered half devoured by ants, and it is evident these insects do not merely attack their formidable prey when *in articulo mortis*, but when in health. I have myself observed one, seemingly in health and vigour, pursuing its course along a path until it happened to cross a run of ants, by which it was surrounded,

and after some hours, during which the hostile force did nothing, apparently, but surround the (to them) huge creature, it succumbed, and was borne off a victim. It is not supposable that the jaws of ants, trenchant as they are, can inflict a fatal wound on the hard-shelled Coleopteron, and my own theory of the matter is that in some way the fumes of the formic acid effused freely by the ants have a poisonous or stupefying effect. This will be another count in the indictment against the ant tribes, if they help to accelerate the death of such useful insects as the Carabidæ.

The Violet Ground-beetle, *Carabus violaceus*, is a species found commonly throughout Britain, both indoors and out of doors, mostly the latter, though it is sometimes tempted into the house by the chance of a banquet upon cockroaches and crickets. The wing-cases in this species have a beautiful violet hue, and they are studded over with small indentations. Not unfrequently specimens will be seen with their wing-cases bent or partially damaged, owing to the insects having thrust themselves into narrow openings for the purpose of seizing other insects that may have fancied themselves in a secure hiding-place. It is at night that *C. violaceus* takes its excursions by preference, when individuals are abroad on the garden mould, and also in the paths, seizing

\* From Cassell's Figuier's "Insect World."

† From Duncan's "Transformations of Insects." Published by Messrs. Cassell.

various insects, large and small, and also occasionally young snails. This must not be handled too roughly, as it can exude from the mouth a pungent liquid that is irritating to the human skin, and the jaws can also give a sharp nip. The Golden Ground-beetle, *C. auratus* (fig. 2), is not so plentiful as the preceding, perhaps even more useful to us, as it has a great liking for the terrible cockchafer or May-bug (*Meleolontha vulgaris*). There is no doubt that *C. auratus* does attack and kill not only cockchafers, but also the handsome Rose beetle, which is mischievous in some years. And, according to Latreille the Carabus selects the moment when the female cockchafer is seeking on the ground for a suitable hiding-place to bury her eggs, and destroys the parent and the brood in embryo. This species is a golden green, with antennae and legs brown, and sculptured wing-cases, which are also ribbed. On the Continent they have given it the name of "The Gardener," and also "The Seamstress," which is not so intelligible, and the insects are occasionally collected by the peasants and farmers and brought to those spots where their services may be of value. M. Michelet, in true French style, is exuberant in his praises of these and the allied species. "These tribes of warriors," says he, "armed to the teeth, under their heavy cuirasses, have a wonderful activity, and form a perfect rural constabulary day and night, without holidays or repose, protecting our fields and gardens. They never touch the smallest thing. They are occupied entirely in arresting thieves, and they desire no salary but the body of the thief himself." Like the beetles of the genus *Cicindela*, the Carabi are not very friendly to each other, and a pair that happen to meet will combat fiercely.

The larvæ of these beetles are not about in the day, keeping under stones or clods. By the spade of the gardener they are often brought into view against their will, and then appear helpless, though not so in reality. Their bodies are narrow, and in colour suited to the usual abode of each species, while the front legs, head, and neck, are very strong, and the arched mandibles, sickle-like in aspect, have also additional teeth at their base. The larval state probably lasts two or even three years in many species.

Some beetles, familiarly called "Bombardiers," belonging to this group, Mr. Wood considers have a title to our friendly notice, as, though not generally visitants to gardens, when they do arrive it is to prey upon small insects. Several have the singular faculty of being able to explode or discharge a bluish vapour, which serves for their protection, and a volley of which is even accompanied by a sort of report. One of the most distinguished by its use of this mimic artillery is that called *Brachinus expulsores* (fig. 3), which resorts to the banks of streams, gathering in parties, perhaps on the principle of self-defence, for another predacious beetle of a rich green hue, *Calosoma inquisitor* by name, has a fancy for hunting *Brachini*, and a stern chase between one of each species is rather amusing, because the Bombardier will repeat his discharge of smoke several times, and as each time the foe in the rear makes a pause, it gives the fugitive a chance of escape, though not the nimbler species. That species of *Calosoma* has been termed "inquisitor," on account of its investigative habits, as it is always searching or peering about, not from mere curiosity, doubtless, but excited by the "keen demands of appetite." But this beetle does not limit itself to excursions in the lower regions, for, quitting the earth, it will mount trees and shrubs after sunset and devour caterpillars, which can, of course, make little resistance. Mr. Wood states

that in England it is partial to Oak-feeding caterpillars. The larva has similar habits.

Another species of the genus *Calosoma*, that is, *sycophanta* (fig. 3), is more remarkable in several particulars. Seldom taken, or, at least, seldom noticed in this country, abroad it is considered of great value, and encouraged in parks and gardens. Undoubtedly it must be reckoned as British, for in 1872 specimens were taken in several places in the south of England, where it could hardly have been introduced from abroad; though it might be to our advantage to do that, and have the beetles or their larvæ imported from France, for they would in all probability soon increase, and do us effectual service. *C. sycophanta* in the mature condition is a handsome beetle, the limbs and head are of a violet colour, and the wing-cases, which are punctuated, usually of a green and gold tint. Unlike the Carabi, which are rarely able to fly, *C. sycophanta* can proceed rapidly by the aid of either wings or legs. One of the species of the Processionary Moths (that attached to the Oak), is a mark for this beetle, which rushes upon them regardless of their webs and of the numbers in which the caterpillars are found, where they occur at all. The black grub or larva is equally disposed to attack them, and this black rather helpless-looking creature may be seen on trees, sometimes in company with the perfect insect, gorging caterpillars until it can scarcely crawl.

The family of the Harpalidæ contains a host of small beetles, some of which are "Sun-shiners," for they have golden or bronze colours, and display themselves in the sunshine, while others are dull in hue, and inclined to concealment. A well-known representative is *Harpalus cæreus*, which is to be taken even in the garden of the cockney. Nearly all these are carnivorous, preying upon various larvæ, bugs proper, of the order Hemiptera, small

flies, probably also on millipedes and Acari. Many of these are killed by accident in the needful operations of digging, &c., which is unfortunate but unavoidable.—J. R. S. C.

### DIMORPHISM IN FRUITS.

We have frequently met with and heard of two varieties of fruits apparently quite distinct being found on the same tree, and not unfrequently we have heard the correctness of statements to that effect disputed. The circumstance has been attributed to budding or to grafting; and to some it has never appeared possible that such a thing as bud-variation could possibly take place. It is not unusual to see variations of various kinds on plants. Leaves, shoots, and flowers "sport" on the same plants, and why not fruits?

The instance of two distinct Apples being produced annually on the same tree in the garden of Mr. Lee at Clevedon is now well known. The origin of the Scarlet Golden Pippin by bud-sport is also well known to ourselves; and a similar instance of two distinct Pears being produced on the same tree in the garden at Badminton is also a well-ascertained fact which we have investigated. A new example has appeared in France in the collection of our friend M. Durand, of Bourg-la-Reine. It is thus described by M. Rivière in the "Revue Horticole." "Among the Apple trees we saw a young vertical cordon bearing two beautiful fruits of the same size, but each of different form and colour. One was on a spur above a yard from the ground; its colour of a beautiful greenish yellow, golden towards the sun, with numerous white dots. It was slightly irregular in shape, the stalk almost wanting; and it exhaled a strong very agreeable perfume. The other, produced on a

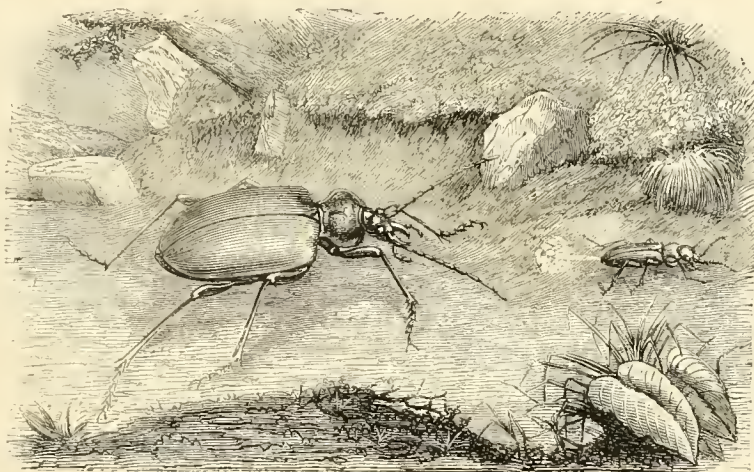


Fig. 3.—*Calosoma sycophanta* pursuing a Bombardier Beetle (*Brachinus expulsores*).\*

spur higher up, was larger than the former, conical and regular in shape, washed and mottled with lively red, and with a violet bloom in some parts, a third only remaining yellow. Unlike the other fruit, this has no perfume. The variety on which this dimorphism has shown itself is *Ménagère*, and the conical coloured fruit bears a strong resemblance to Emperor Alexander."

### APONOGETON DISTACHYON.

THIS is one of the best hardy aquatic plants I know. A plant of it received from Messrs. Veitch about a year ago, and planted in about a foot of water, became established quickly, producing both its deep green foliage and curious white flowers abundantly, and it has done so continuously ever since. Certainly in winter it would often not have more than one or two flowers fully expanded at the same time; but it never was without buds or flowers, and once or twice when the flowers were destroyed by frost they were quickly replaced by others. The foliage does not appear to suffer at all from the effects of frost, continuing in a green and flourishing condition throughout the winter. It is this singular property which to my mind renders the plant so valuable, very few other aquatics partaking of its evergreen character, or producing much display till summer. Thus, while the *Aponogeton* has been in full beauty throughout the spring, such plants as *Sagittaria*, *Stratiotes*, *Butomus*, *Villarsia*, and *Nymphaea* as yet afford us nothing but foliage.—E. L.

### NEW BOOK.

*The Amateur's Rose Book.* By SHIRLEY HIBBERD.

SECOND NOTICE.

IN continuing our remarks on this work, we would draw attention next to the chapter devoted to propagation by cuttings, layers, grafts, or budding.

The easiest of all ways, Mr. Hibberd observes, to get young plants of dwarf Roses is to take advantage of suckers; but there are not many Roses which throw out suckers unless some artificial means are used to induce them to do so; but when plants have originally been worked on the Manetti stock, fresh Rose plants may be obtained by planting the Roses deeply, burying the whole of the stock, and, in cases where Roses do not root freely, cutting a slight nick or notch in the Rose just below the ground line. There are illustrations in aid of this explanation in page 46. On page 47 he says, "Unthrifty standards may be made to yield own-root Roses by laying them down so that the base of every good shoot may be covered with earth. In resorting to this practice it will be well for the amateur to bear in mind that the Briar will probably die, and therefore, if the shoots do not make roots of their own, they must die also. To make the more sure of success it is advised to cut notches or tongues in the shoots, and cover with mellow sandy soil."

With regard to this suggested plan of obtaining own-root Roses from unsightly standards, we are inclined to think it is hardly worth the trouble of trying it. No doubt in some cases it might succeed, but as a general rule a standard of that class had better be at once discarded.

The next plan recommended, that of pegging-down or layering branches from dwarfs, is often a very effective way; care, however, must be taken not to break the branches near to the junction with the parent stem, or, as is often the case without proper precautions, to tear them out altogether. Many of the Teas and Chinas that have long pliant wood may be propagated easily in this way.

After describing layering in pots, and also striking by circumposition, where a potful of soil is hung in the tree with a branch passed through the hole in the pot, he calls attention next to the plan of striking from cuttings, and then from eyes or wood buds. This is one of the best ways of securing good plants and economising all the wood of a rare sort, but at the same time it requires care and attention, and perhaps we might add more knowledge of the ordinary wants of plants than the usual amateur possesses. We will give a quotation from his own words, which will be of interest to many Rose-growers.

"The next practice will be to make one leaf and one point suffice with an inch of wood attached, and this is easily done, and ought to be done to prepare the practitioner for a skilful handling of eyes, which make better plants than cuttings, and in fact the best plants that can be had; they have the vigour of seedlings, with the advantage of being true to the several

kinds from which the buds were taken. Once more cut from the tree a nice stout rod of this year. If the buds are pushing, good; but if pushed they will not do. In other words, if you see the buds, and they look as if they meant to grow this season, you are safe; if they have already begun to grow, and have perhaps pushed to the extent of the sixteenth of an inch, reject them, for you will probably fail in all your efforts to persuade them to make roots. Having your nice, plump, green rod half ripe, yet in a condition to peel easily; in fact, just such a rod as you would cut if you were intending to bud Briars, you are in a fair way to proceed safely. Instead of preparing cuttings, take out each bud with its leaf by a crescent-shaped cut. This, in fact, is the same as if cut for budding Briars; but the wood is not to be removed, so you escape all the 'niggling' that is the stumbling-block of nine out of ten amateur rosarians. Have your pans and glasses ready; the pans with a layer of peat or leaf mould at the bottom, and at least 1½ inch of silver sand at the top. Plant the bud with the leaf upright, keep it moist and shaded, and in due time it will throw out roots from the edges of the bark all round, and then the leaf will fall, and the bud will start and grow."

We may as well remark after this quotation, as it would take up too much of our space to continue to transcribe from the book the rest of Mr. Hibberd's notes on this head, that the chief secret of success depends on the buds being kept plump without being too wet or too dry. If the leaves damp-off and turn black too soon, then there is too much moisture; and if, on the other hand, the leaves dry up and shrivel too soon the buds too will suffer. The leaves should be kept damp and close, but the sand not too wet, and the temperature should be that of a mild hotbed, though in summer a cold frame in a shaded situation will do.

After describing the method of striking from autumn and spring cuttings, our author next turns in the following chapter to the methods of propagation by means of buds and grafts. So much has been said lately about budding and grafting that we need not do more than say that the descriptions given are very lucid, and that anyone with a little practice might succeed in budding from the instructions given, though we must warn amateurs that a little practical experience, under the superintendence of a practical operator, is far more efficacious than any verbal description of mere manual routine; and though it may to all appearance be an easy thing to bud Roses, yet it is not so easy as it looks. Many a bud is spoilt from the wood being badly extracted, or the bark torn, or the bark not properly tied, &c.

A good deal of the chapter on budding is devoted to a description of the stocks, and nurserymen would do well to study what is said with regard to the roots of the Briar, so many of the stocks being cut out of the hedgerows, and tied together like what a Yorkshireman would call a bundle of "gib" sticks, without apparently any respect for that important adjunct, the roots: hence it is that so many die in the nursery rows; and so many again cannot bear the transplanting from the nursery to the garden. Much has been said lately about the value of the seedling Briar, and no doubt one of the great advantages of using seedling Briars is that a nurseryman has full command of the roots from the very first, and if he choose to take the trouble and wait for a little time he can also train the plants into standards with clean straight stems, and if this were carried out many of the disadvantages with regard to Briar stocks would be done away with. But Rose-growers should always bear in mind that Dog Roses, and therefore Briar stocks, require strong soil, that the ordinary run of garden soils are too light; and that whatever may be the value of the seedling Briar, dwarf Roses on the Manetti stock will eventually supersede all other kinds of Roses, as, indeed, they are now fast doing. We do not wish to infer from this that those who have strong soils and are fond of exhibiting can ever discard newly-budded Briars, but exhibiting is not the end and object of Rose-growing; nor ought we, for the sake of getting a few fine Roses, to make our Rose gardens unsightly the greatest part of the year by rows of bare standards. We regret that Mr. Hibberd has not devoted more space to describing the propagation of the Manetti and the method of budding on it by barrel grafting; still he is thoroughly in favour of dwarf Roses, and what he does say is very much to the point.

We cannot altogether praise the woodcuts in the book; some are rough in the extreme; and the woodcuts of the Rose pavilion, page 178, and the design for the entrance to the Rose garden, page 219, are very good examples, we should say, of

what to avoid—certainly anything more out of keeping with a Rose garden we have never seen; the last, a kind of hideous Chinese pagoda, decorated at the corners with wriggling snakes, head and tail erect, whether to warn off intruders or no we can hardly say. The drawings, on the other hand, of vases for decoration, as Mr. Cypher's central vase for Birmingham, page 187, are nicely executed, though we cannot altogether approve of the plan of overloading Roses with other flowers, and we hope that the plan of sinking Palms and Dracenas through the table, as page 188, though it has its advocates, may not be generally adopted. Roses in our opinion, as arranged for the table, require little but their own foliage, and should be chosen specimens; each Rose should be arranged so as to show itself distinctly, and not be crowded with other flowers, and any interstices may be filled with small buds of Tea Roses or Moss Rose buds; a few Ferns, and that chiefly Adiantum, or very delicate Ferns, will be about the only foliage admissible with Roses. We have seen, as notably at the Royal Horticultural Society's Oxford Show, large fronds of Male Fern, Athyrium Filix-femina, &c., made use of to such an extent as almost to obliterate the Roses and entirely cover the tablecloth.

The list of Roses and selections at the end of the book will be found very valuable, especially that which gives the raisers' names and the period at which the varieties were sent out.

Space will not allow us to give any further notice of the book, which, though it may be somewhat deficient in the matter of taste, is, on the whole, of great practical value, and one which we can thoroughly recommend, not merely to the amateur or the gardener, but to the professional nurserymen as well.

#### THOMAS TUSSER.—No. 4.

We believe that, although his will, in consequence of disputes among his seven executors, one legitimate child, and many illegitimate children, was not proved until the 22nd of June, 1564, Sir Richard Southwell died in or about the year 1561, and that was the time Tusser removed "to Norwich fine, for me and mine, a city trim." What was his occupation there we have no certain information, but if Fuller is correct in stating that he was once a schoolmaster, it was probably there and then. At all events, John Salisbury, Dean of Norwich, enabled him to earn a livelihood.

"Thou gentle Dean, my only mean,  
There then to live."

This has given rise to the suggestion that Tusser once more became a chorister, and we can only say that he may, and that such employment was not incompatible with schoolmastership.

John Salisbury was installed Dean of Norwich in 1539, on resigning the Priory of Horsham St. Faith. In 1554 he was deprived of the Deanery by Queen Mary; but restored by Queen Elizabeth in 1560. He died in 1573.

Tusser probably remained at Norwich until about 1566, and there was born his eldest son, Thomas. A most violent stranguary, of which the doctors could not

drove him

"Devise to 'swage, the stormy rage,"

"From Norwich air, in great despair  
Away to fly, or else to die,  
To seek more health, to seek more wealth,  
Then was I glad."

And he sought them at Fairstead, in Essex, by living in its parsonage, according to a note he made, and renting its tithes. He remained there until 1571, and during his residence there two of his children were born, for the present rector, the Rev. R. Marsh White, informs us, in reply to our inquiry—

"I find on searching from 1538 to 1585 two entries, of which the underwritten are copies.

"1568.—John Tusser, the son of Thomas Tusser, gent., was baptised the 3rd day of July.

"1570.—Mary Tusser, the daughter of Thomas, was baptised the 22nd of May."

In the first entry he is styled "gent.," a distinction omitted in the second entry, may be as a mark of disapproval of his conduct towards the tythe-payers, for he confesses that "the titling life" was "titling strife," and he "spy'd, if parson dy'd" he would suffer difficulties and have no gain, so he gave up the "parsonage land," and once more sought pastures new.

"Thence, hy-and-by, away went I,  
To London straight, and hope and wait  
For better chance."

What "better chance" he expected to have in London we know not, and probably he did not himself know, but he was a

good hopper, and dwelt in the parish of St. Giles, Cripplegate, during the year 1572, expecting that would come to pass which he hoped for. Idleness was not one of Tusser's defects, and during his many changes and vicissitudes his pen was not allowed to be idle; and jotting down the results of his experience he had increased his "one hundred pointes" fivefold, and now, whilst resident in London, he published them in a small quarto volume.

The edition of 1573 has this title page—

"Fine hundredth pointes of good husbandry vntoed to as many of good huswiferie, first deuised and nowe lately augmented with diuerse approved lessons concerning hopps and gardening, and other needful matters, together with an abstræt before every moneth, containing the whole effect of the sayd moneth with a table and a preface in the beginning, both necessary to be reade for the better understanding of the booke.

"Set forth by Thomas Tusser, gentleman, seruent to the honorable Lord Paget of Beudesert.

"Imprinted at London in Flete strete within Temple barre, at the signe of the Hand & starre, by Rychard Tottell, anno 1573. Cum privilegio."

"The epistle to the Lord Thomas Paget, second sonne and now heire to the late Lord William Paget his father."

Tusser's son Edmund was born about the same time, for his baptism is in the Register of St. Giles's Cripplegate, dated March, 1572-3.

What was Tusser's occupation whilst then in London is not known to us, but it was not enduring, for he tells,

"When gains were gone, and years grew on,  
And death did cry, From London fly,  
In Cambridge then, I found again,  
A resting plot."

The "death" he fled from was the plague. It commenced in 1573, and so prevailed in London during the years 1574 and 1575, that Hollinshed recorded that the Lord Mayor and Aldermen did not resort to their public dinners "to avoid infection, like to have increased by coming together of such a multitude." He particularises the number which died weekly, and in the first week of November of the year last named he wrote, "Thanks be given to God therefore, there deceased of all diseases but one hundred and ten, and of them of the plague but six and twentie." He notes in his Index that it was called "the great plague."

Tusser's "resting plot" at Cambridge was Trinity College, where he matriculated as servitor on the 5th of May, 1573.

#### FRUIT PROSPECTS.

It is a matter of much interest to the gardening world—and in these days who, in the country at least, is not a denizen of that world?—to mark the results of our "May winter." As far as I can judge the damage done in my neighbourhood (North Wilts) is just in proportion to the nearness of a garden to any stream of water; of course that nearness would imply lowness of situation. I am some distance from a brook, and my garden lies on a south slope, sheltered from the east and north. I have a most abundant crop of Gooseberries, the like, or nearly, of Currants, and a good crop of Apples and Plums, but not many Pears. Below me, near the water, the Gooseberries fell off the trees, and the Apple crop is nil. In the circuit of the villages I find on inquiry the like results. Away from water, the fruit prospects are good, and frequently very good; but quite the opposite where the situation was unfavourable. Striking the balance I would say that as the crop is very good in many places, the average may be considered as a good produce, the loss in one garden or one place being more than made up by the gain in another garden or place. The Potatoes were less cut by the frost than I have known them in some other years. There is too frequently an exaggerated, and I fear somewhat interested, report put in circulation about fruit and Potato failures: I write to correct this. The present fear is from want of rain, for the dryness has come early, and if long continued must seriously affect every kind of vegetation.—WILTSHIRE RECTOR.

THE ungenial weather of the past May has done a large though not unprecedented amount of damage here; the injury being most marked on the high grounds, through the effects of the keen north-west and north-east winds. Whole fields of Peas have been killed, and in several places these are being now ploughed-up and Potatoes planted, though I venture to question the expediency of putting in Potatoes in May. The leaves of that plant have suffered from the wind

and frosts; in some instances they are hardly likely to recover. In the fruit districts about Higham, Southfleet, and Singlewell, where there was an abundant promise in April, matters do not look well. The Apple trees have escaped best; but all agree we shall not have a good fruit season in this part of Kent.—J. R. S. C.

### FLOWERS FOR OUR BORDERS.—No. 33.

MECONOPSIS WALLICHII.—DR. WALLICH'S MECONOPSIS.

THE handsome *Meconopsis* here figured is remarkable as being one of the very few plants, if not the only one, of the order with blue flowers. It was discovered in the Sikkim Himalaya by Dr. J. D. Hooker, who sent seeds to the Royal Gardens, which produced flowering plants in June, 1852. The plant attains the height of 2½ to 3 feet, and is everywhere of a pale glaucous green, covered with long reddish bristle-like hairs. The root-leaves are very large, often 12 to 18 inches or more long, stalked, and much lobed and cut. The stem-leaves are small and without stalks. The flowers are rather numerous produced from the axils of the upper stem-leaves, on short drooping peduncles, and are of some size; the ring



*Meconopsis Wallichii.*

of yellow stamens round the seed-vessel contrasts charmingly with the pale blue colour of the petals. The seed-vessel is more elongated than in the true Poppies, and is densely clothed with erect bristle-like hairs or setæ; the stigmas are elevated on a thick cylindrical style as long as the ovary, as shown in our figure.

In *Meconopsis Wallichii* and the other species of this genus the capsule opens when ripe by six or seven valves at the top of the style, which appears to be rather a mere elongation of the ovary than what is generally understood to be a true style. The numerous seeds are arranged on thin membranaceous plates, radiating from the inner walls of the capsule.

The writer regrets to be obliged to add that since the foregoing description was originally penned *Meconopsis Wallichii* has quite disappeared from European gardens, having, like so many other fine plants peculiar to the Himalayan regions, proved intractable under cultivation. Now that alpine plants are more frequently treated with success than formerly, further trials, could seed be obtained, might be attended with more favourable results.—(W. Thompson's *English Flower Garden*, Revised by the Author.)

### GYMNOGRAMMA TRIANGULARIS.

THIS is a beautiful plant, and a grand addition to the cultivated forms of Gold and Silver Ferns, which are such special

favourites with Fern-lovers of the fair sex. Hitherto we have been compelled to damp the ardour of our friends by assuring them that without stove heat failure would be the result of any attempts at their cultivation. Here, however, we have a species which does not require heat, but which will thrive admirably in the cool fernery. It should be grown in loam, peat, and sand in equal parts, the pots having been thoroughly drained. It usually grows from 10 to 15 inches in height. In general appearance it somewhat resembles a small form of *Cheilanthes farinosa*, but is abundantly distinct from that plant. The fronds are "pedately triangular in outline," the upper surface is rich deep green; the lower surface, however, is covered with a rich yellow farina, through which the black sori protrude, as in other members of this family. In some varieties the farinose powder is white instead of yellow. The plant has been brought into commerce by Mr. B. S. Williams, of Upper Holloway, in whose nursery I recently saw it, and I would advise all our Fern-loving readers to add this gem to their collections. It is a native of California, being rather abundant about the neighbourhood of San Francisco.—EXPERTO CREDE.

### WHAT IS THE USE OF PROTECTING?

THE notes which appeared under this heading on page 364 are far too important to be lightly passed by. One can hardly conceive any person occupied in rural pursuits, especially among plants, being content to take things for granted without inquiring into the action of those natural laws which so materially affect his efforts for good or evil. In the communication referred to, "WYESSIDE" states that on a frosty night some canvas was thrown "over some Potatoes whose haulm was about 6 or 8 inches high. To his gardener's utter surprise, when he took it off in the morning he found that most of the plants underneath had been injured by the frost, while those that had been left uncovered stood firm and uninjured;" and he adds the somewhat remarkable sentence, "I imagine that few of your readers would believe this to be possible, and yet I saw it myself." Now, instead of feeling any doubt about the matter, it is precisely what one would expect; and here is the explanation: All air contains moisture, which is condensed by contact with anything colder than itself. The canvas thrown upon the Potatoes speedily became colder than the air which it enclosed; the moisture contained in the confined air was then condensed, saturating the canvas, which, instead of acting as a protector, became in reality a conductor of cold, and the frost, of course, quickly seized upon the moistened canvas and every Potato leaf or shoot that it touched. The uncovered Potatoes were doubtless preserved by the heat contained in the dry soil being radiated or thrown off during the night sufficiently to resist or soften the severity of the frost.

It does not follow, however, that protection is either useless or unnecessary—far from it. Every means of screening tender vegetation from the effects of cold, if rightly applied, is of the greatest value. If "WYESSIDE" had raised the canvas on a slight framework of poles a foot or two above the Potatoes, it would have answered his expectations, because then it would not only have checked the escape of radiated heat which constantly occurs at night, but it would from its own power as a radiator have returned or thrown back the heat again to the earth, and thus the unscathed plants would have been positively nurtured by the play of this genial temperature among them.—EDWARD LUCKEYRST.

### BURLEY-ON-THE-HILL.

THE SEAT OF G. H. FINCH, ESQ., M.P.

ABOUT two miles from the ancient town of Oakham, and ten miles west from Stamford, is Burley, finely situated, standing on an eminence overlooking the fertile vale of Catmose, and commanding magnificent views of wood, water, and the distant country for many miles. At the time of the Norman Conquest it was called "Burgelai," a most appropriate name, for it is literally "meadow land on a hill." It would be misplaced to trace its descent through the families of De Spencer, Plessington, Francis, Sapcote, Durant, Wake, Brokesley, Harrington, and Villiers. During its possession by the latter "gay lord of Buckingham," here Bishop Andrews preached before James I.; here Ben Johnson's masque of "The Gypsies" was first performed, and before the same monarch. The Parliamentarians destroyed the house, and afterwards the estate was

sold to the Earl of Nottingham. He rebuilt the house, and enclosed the park with a wall six miles in circumference.

The mansion, of which we give an illustration of the south view, is a Doric building, one of the finest in England. The terrace in front is 300 yards long, with a walk 27 feet wide down the middle the whole length. At the east end is a flower garden, and another at the west end, of which we give illustrations further on. Near to the west end of the mansion are some very handsome trees and shrubs; we will notice a few. In the first place there are some fine bushes of Portugal Laurels, 20 feet high; then there are two very fine plants of *Araucaria imbricata*, 18 feet high, in good health; a plant of *Magnolia*, 12 feet high, a fine bush; a *Wellingtonia gigantea*, 30 feet high, growing well; a *Cryptomeria japonica*, 40 feet high; a grand plant of variegated Holly, 30 feet; an Evergreen Oak, 20 feet; and *Arbutus Andrachne*,

or Oriental Strawberry Tree, a fine bush 20 feet high. The most remarkable circumstance about this species of *Arbutus* is, that in spring it sheds its old bark, and the young bark at first is green, then whitish, afterwards changing to different shades of brown, but on the approach of winter it becomes red. Young plants are rather tender, and they should always be planted where they are protected from north winds. Growing here are also a fine tree of deciduous Cypress, *Taxodium distichum*, about 30 feet high, and many other fine trees and shrubs, which all seem to flourish, although the situation is high and somewhat exposed.

Under the terrace wall is a long border 3 feet wide, which in summer is planted in the ribbon style. On this wall are trained flowering shrubs, such as Roses, Clematises, and Magnolias. Near this, on an east wall, is a fine specimen of that grand plant for spring flowering, *Wistaria sinensis*, which



BURLEY-ON-THE-HILL (From a photograph by Couais & Priest, London Road, Grantham).

covers a space 60 feet long. In the distance are seen from this terrace two large fish ponds, one nine and the other about twelve acres. Between these ponds and the mansion in the valley there are some very fine Oaks, some measuring 16 and 18 feet in circumference. In the woods there are many miles of drives and walks, which are bordered with healthy plants of Laurels and Rhododendrons.

The steep descent in front of the terrace was at one time cut into five or six terraces supported by brick walls; if these walls had been of stone and highly finished, I have no doubt they would have added dignity to the mansion, but being of red brick I consider they were very properly removed, and the present noble terrace wall put in place of them. Below the terrace wall is an open space of grass which slopes down to the woods in the valley.

We will now retrace our steps to the north side of the mansion. Here is placed the principal entrance, which is, more properly speaking, a work of art. There is a spacious court surrounded by a colonnade, together about eight acres, five acres being kept as lawn, and three acres as gravel walks and colonnade. A stranger visiting Burley for the first time from the north-east lodge, is surprised to find such fine views as burst upon him when he passes this colonnade. The surrounding country to the north and east, being somewhat flat, it gives no promise of such magnificent views. Hence Burley

is grand in the point of contrast. Here the trees have been planted so as to shut-out Oakham and the Leicestershire hills, and in passing this point the view is unexpected.

At the east end of the house is placed Mrs. Finch's flower garden (see page 470), of which one half is represented in the engraving, the other half corresponding. This was very gay with spring flowers. The materials employed were nothing uncommon, but the effect produced was very pleasing. The planting was as follows:—

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| 1. Red Van Thol Tulips, very good.  | 6. Centre Hyacinth Fleur d'Or,     |
| 2. Rose-shaded ditto ditto          | yellow; two rows of Hyacinth       |
| 3. White ditto ditto                | Unique, dark purple.               |
| 4. Scarlet ditto ditto              | 7. Scarlet and rose-shaded Tulips. |
| 5. Centre Amy Hyacinth, crimson,    | 8. Anbrietta purpurea. The best    |
| dwarf and pretty; two rows of white | for massing.                       |
| Hyacinth La Pucelle d'Orléans.      | 9. Double Tournesol Tulips.        |

Adjoining the house at the west end is placed Mr. Finch's flower garden (see page 471), which was also gay with spring flowers planted as follows:—

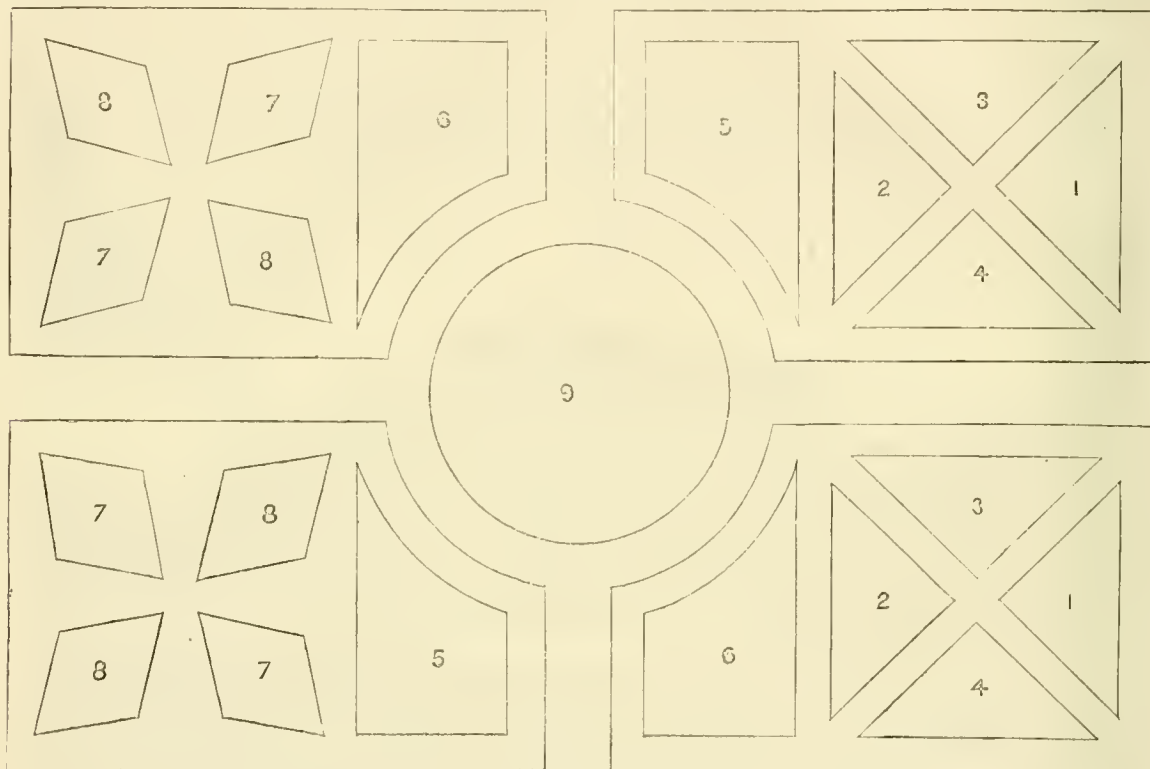
- |                                    |                                 |
|------------------------------------|---------------------------------|
| 1. Tournesol Tulips in centre. Two | 4. Amy Hyacinth, crimson and    |
| rows of Scarlet Van Thol, one      | dwarf, edged with one row of    |
| row of rose-shaded.                | white Hyacinth La Pucelle       |
| 2. Anbrietta purpurea, with broad  | d'Orléans.                      |
| edging of Golden Feather, which    | 5. Fleur d'Or, yellow Hyacinth, |
| stands the winter here well.       | edged with one row of Unique    |
| 3. Red and yellow Van Thol Tulips. | Hyacinth, dark purple.          |

Towards the west end of the principal terrace there is

another flower garden, called the Lower Terrace Garden. This is seen from the grass on the terrace, but hardly noticed from the house. In this garden there are some nice standard Rose trees, and the walls are well covered with Peaches and Figs. There is an old vinery in this garden placed against the terrace wall. The Vines in this house are supposed to have been planted over one hundred years. They are mostly Black Hamburgh, and bear well every year; the bunches are small, but they colour remarkably well, and are of good quality. I question very much if they are not of superior quality to Grapes from younger Vines.

Below this terrace garden is a fruit garden of about one acre well filled with trees of Plums, Gooseberries, and Raspberries; and on the walls are Pears and Plums trained fan-

shape. Against the south wall of this garden is placed a range of hot-houses, about 130 feet long, consisting of an early Peach house, 50 feet long, with trees trained on the back wall, and young flat-trained Peach trees in front bearing excellent crops. On the shelves were a number of Strawberry pots of President, which seems to be an excellent variety for fruiting in March and April. In the middle is a greenhouse with a number of very useful plants for cutting and drawing-room decoration, such as Primulas, Cinerarias, Heaths, Epacris, Azaleas, and many others, all in good health. At the west end is a vinery 30 feet long, which has been planted about twelve months with Muscat of Alexandria. The old Vines are left growing so as to produce a few bunches till the young Vines come into bearing. In this house, and also in a range of cold frames in



MRS. FINCH'S FLOWER GARDEN.

this garden, there are great numbers of bedding-out plants. Bedding-out is carried on rather excessively, there being three flower gardens to fill besides a great many borders. In all from thirty-five to forty thousand plants are used in these gardens every year. Much credit is due to Mr. Temple, the gardener, for the manner in which he supplies such large numbers of bedding plants, which were all in excellent condition.

Leaving the fruit gardens, we pass through some pleasure grounds till we reach the kitchen gardens, which are rather badly situated, being, to my mind, too much confined by large trees. Within the walls there are about three acres, and one outside. The old Apple and Pear trees are being removed gradually, and young Apples and Pears are being planted as pyramids to replace them. Young Plum trees are also being planted as standards. On the south wall young Peach and Nectarine trees have recently been planted, and they are making nice young healthy wood. In this garden there are three houses; one a vinery 45 feet long by 12 wide. In this house the Vines have been planted about three years by Mr. Temple. The Vines have made excellent wood, and are showing well for fruit. The sorts are Black Hamburgh, Muscat Hamburgh, Trebbiano, Trentham Black, and Royal Muscadine. On the latter variety I counted from sixty to seventy bunches, but these have been reduced to six or seven on each Vine. The border in this house is composed of good turfy loam and brick rubbish, and nothing could be more satisfactory than the state of the young Vines. There is a stove

recently built with a north aspect, and which, I believe, was erected according to Mr. Temple's instructions. The inmates do him credit, for they were in good condition. There are some nice young plants of Begonias, Allamandas, Sanchezia, Gardenias, and Ferns, and at one end a few good Orchids, Caladiums, and Gloxinias. The Cucumber house adjoins the stove on the south side; it is 45 feet long, the same length as the stove. Telegraph is the variety mostly grown here, and when true few are better for either winter or summer supply. There are about fifty lights of frames for growing Melons, early vegetables, salads, &c.

Altogether the general keeping of the gardens and grounds shows that Mr. Temple is master of his profession.—JAMES SMITH, *Exton Park*.

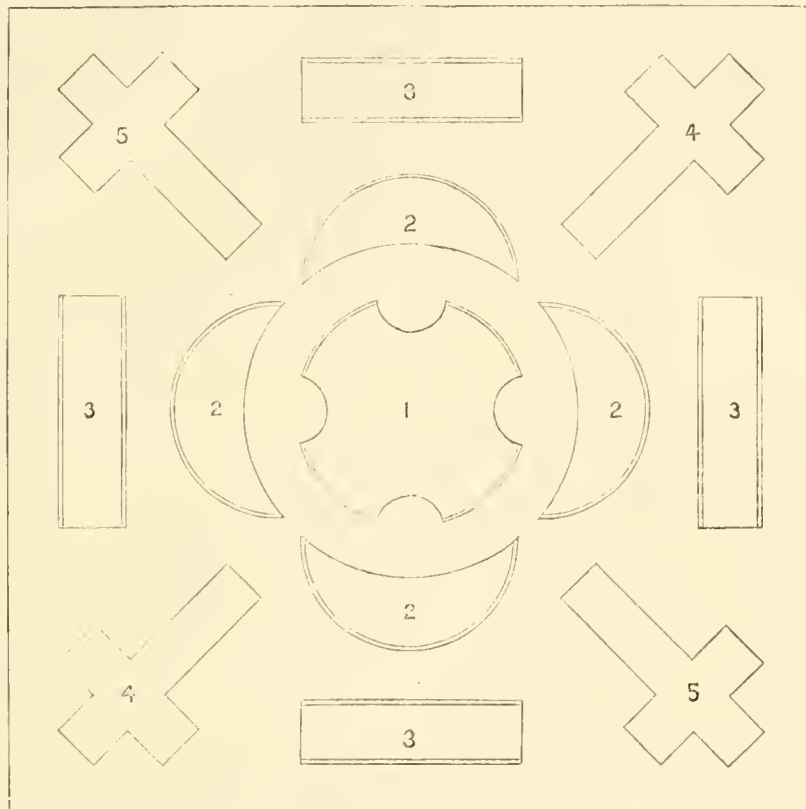
#### NOVELTIES IN THE ROYAL GARDENS, KEW.

*FREMONTIA CALIFORNICA* is in bloom on the wall of the herbaceous ground. It appears to have a profusely-flowering habit. On the spurs of one branch there are ten flowers in the space of a foot, seven of which are open; they are bright yellow, about 2 inches in diameter, and similar in form to a single Rose, but of greater substance. It branches with great regularity, and has neat foliage evenly produced over the entire tree. To do well it should be planted against a wall, and be protected during very severe weather; in that position it is very handsome. It is the only representative of the order

Sterculiaceæ that can be grown out of doors. The leaves and other parts are clothed with stellate hairs. It was first introduced by Messrs. Veitch a few years ago. Among the Lilies, *L. pyrenaicum*, *L. Szovitsianum*, and others are in bloom. In the next bed *Anthericum Liliastrum* is producing several spikes of its large white flowers. *Asphodeline lutea* and *A. taurica* are very ornamental; they have graceful foliage, and the yellow flowers are produced long in succession. The New Zealand *Veronica buxifolia* is pretty and interesting; is hardy, and forms a miniature shrub—round and dense; the Box-like leaves are glaucous, and the flowers white, produced many together at the tips of the branches. A clump of the South European *Gladiolus byzantinus* has a fine appearance, with about twelve spikes. Noteworthy of the Irises recently open

are *I. variegata* var. *elatio*, a fine variety with stronger habit of growth than *I. variegata*, and richer colouring. *I. Guldensadiana*, a thin flower, distinct, but not very ornamental. *I. laevigata*, one of the most stately; the drooping segments are large without undulation. It is known in nurseries, where many varieties are to be found, as *I. Kämpferi*. *Ethionema orientale* is in great beauty with its profusion of pink flowers; it is suffrutescent in habit, and one of the best perennial species. A few yards off *Sarracenia purpurea* is in flower.

Recently open in the Orchid collection are *Cypripedium Veitchianum* (*C. superbians*), one of the finest of the *C. barbatum* type; *Calanthe Masuca*, *Catasetum atratum*, and *C. cernuum*; this genus and its allies "are the most remarkable of all Orchids"—(Darwin); *Oncidium divaricatum* and



MR. FINCH'S FLOWER GARDEN.

*O. pulchellum*, a small but very pretty species; the white lip is very large in proportion to the rest of flower; *Liparis Bowkeri*, *Lycaste Deppei*, *Stanhopea Wardii*, *Cyrtopera sanguinea*, and several more of less interest. A plant of *Oncidium ampliatum* has five spikes of bloom, and the profusely-flowering *O. Harrisoni* is very pretty. *Sobralia macrantha*, a good dwarf variety, is producing its last flowers, after having been in bloom several weeks. Also in flower in this house is the elegant *Utricularia montana*; though usually associated with Orchids, is in no way related.

At the rockwork *Silene Hookeri* is the plant of greatest interest. It was introduced by Mr. Thompson, of Ipswich, under the name of *S. Bolanderi*, but this name being the more recent must give way in favour of the former. It is variable as a wild plant; in this instance the flowers are more than 1½ inch in diameter, the petals are divided into narrow segments so as to suggest the rays of a composite, and the tint is that which people are pleased to call flesh colour. From the peculiar flowers and greyish foliage it is like no other *Silene* in cultivation. It is a perennial, perhaps not quite hardy, and requires care in winter; when at rest it retires, or may retire, beneath the soil, and in that case must not be thrown away as dead. *Lychnis diurna plena* is extremely pretty; the flowers at a short distance look like little Roses. *Houstonia cærulea*, a tiny gem, must have attention; the delicate blue flowers are

borne in profusion on slender erect stems. It is common in North America, though rarely seen in cultivation. Many complain of its being difficult to grow; it does not seem to be, simply requiring moisture with good drainage. It increases freely by division. *Dianthus saxicola* is a distinct and pretty species, with grassy foliage and pink flowers. The most striking plant in bloom is a fine example of *Saxifraga Cotyledon* (*S. pyramidalis*). That grown as *S. nepalensis* is the same; there is not the slightest deviation from the typical character, and from wherever received cannot possibly have anything to do with Nepal. They who consider it distinct should at least adopt a more suitable name. To have this plant in perfection the rosettes must be grown freely from the first, and have all offsets removed. The rare and not easily-grown *Saxifraga florulenta*, figured in the "Botanical Magazine" for this month, seems likely to do well.

In the succulent house two plants of *Agave yuccæfolia* are throwing up their flower stems.

In the south octagon of the temperate house *Eucalyptus cornuta* is in flower and fruit, showing well the character of the genus. The sepals remain united, forming a cap, with which the corolla is combined; the flower opens by its falling away. In *E. cornuta* the cap is large, and resembles in form the "Horn of Plenty." Near at hand *Callistemon rigidum* is producing its brushes of scarlet filaments, and is very orna-

mental. It will flower against a wall, and is hardy with that protection.

### THE CNETHOCAMPA.

RELATIVE to the notice of this caterpillar in the Journal of May 28th, I am not sufficiently an entomologist to be able to enter on the subject scientifically, but I will endeavour to describe, as simply as I can, what I have recently discovered in my own orchard. For two or three days successively I noticed, on the top of a last year's shoot of a rather lofty Apple tree, what appeared to be a piece of dark woollen cloth connected at the bottom with a small bit of old net lace, such as we use on the premises to protect ripe fruit from birds and wasps. On the third day I told the gardener to bring a ladder and ascend the tree, when the darker portion, about 3 inches wide, proved to be a mass of caterpillars, clustering, or rather swarming like bees, on the top of a sort of purse or nest of the finest cobweb, through the top of which they had eaten or broken their way. Supposing the representation of them in your Journal to be the size of life, these were precisely the same in size, and had similar marks on the back. The colour of those in the Journal is not mentioned; those which I discovered were of a dark, dingy, olive green, with a tinge of yellow. On examining other trees we found three other similar nests, all excepting one spread out on the top of a small branch or twig. The exceptional one was formed by the branch on which the creature ascended being crossed by another branch, which grew nearly parallel with it, like a pair of shears slightly open; and in the top or acute angle of the fork was the nest. In all instances, however, there were the remains of a small deserted nest, not more than a square inch in size, several feet below the main nest, which seems to have been the basis of operation. The shoot which bore the first nest discovered was about 4 feet in length, and at the bottom of it, where it shot forth from the branch, about half an inch in diameter; and in the little curve formed by it, about an inch in width, was deposited the first little web. This, I apprehend, contained the eggs, which were thus kept snug and warm during the winter; and tiny specks of excrement about it, like needle points, indicated that the caterpillars had come forth in the embryo state, and grown and increased as they ate their way upward. This shoot had at least a score of good leaf buds on it, but they were all eaten away to the very core. I imagine that the larger insects at top must have made the upper nest, for, when we disturbed them in taking them, we observed that they immediately began to let themselves down by a fine thread, but were captured in a basin before they reached the ground.

I have not been enabled to discover another nest, though the trees have been daily inspected since the first were noticed, I believe we just made the discovery at the happy moment to prevent these rapacious gentry from migrating to other branches. Two circumstances, however, seem to declare that these caterpillars cannot after all be of the species described in your Journal. The first is that I saw nothing which might be justly called processional in their movements. They were freely rambling up and down, and of various sizes, on the shoot between the two webs; moreover, my gardener very unsparingly squeezed them to death with his hand whilst thus wandering without experiencing any inconvenience either from poison or electricity. The second is that though one side of the orchard is bordered by Fir trees of different sorts, and standard Pear and Plum trees are mingled with the Apple, yet all the four nests we found on four different Apple trees. I ought to add that my orchard is in the vicinity of Grantham.—OCTOGENARIUS.

Your correspondent "F. P. G." inquires about the prospect of the Apple crop. Mine is likely to be very abundant; so is the crop of wasps. They became troublesome in the middle of May.

### MULCHING.

At this season of the year, mulching effectually will save much labour in watering, and to a very considerable extent make up for poverty in the soil. Where very prim ideas of tidiness are entertained, mulching is not approved of, as the blackbirds and thrushes pull the material about upon walks and lawns in their energetic search after worms and other moist morsels of food in dry weather. I have often thought that these gentry are worse off for food—at least food of a suitable kind—during dry summers than during severe winters. This was particularly noticeable during the dry summer of 1868 and following years.

Many thrushes and blackbirds died, and they were so weak that they could be caught with the hand.

Materials for mulching are generally plentiful in most gardens; decayed hotbed manure is one of the best, and when this cannot be had, short grass is generally plentiful. Most fruit and vegetable crops are benefited by mulching, but some more so than others. The Raspberry, for instance, which delights in a somewhat moist soil, and is a shallow rooter, should always be mulched in dry situations. Our soil here is dry and thin, and not well adapted to the Raspberry, but by mulching thickly we always secure great crops of fine fruit—in fact, I reckon that the weight of the fruit is nearly doubled in consequence. Celery, too, is mulched thickly with short grass as soon as planted, and it seldom requires more than one or two good waterings. Let the weather be ever so dry, the surface under the grass is always sweet and moist. The mildew which affects the Pea in dry summers is greatly checked, or altogether prevented, by good mulchings along the rows, and extending outwards from the sides about 18 inches. Brussels Sprouts, Broccoli, Cauliflower, &c., which often hang fire after planting in a dry June, make marvellous progress with their roots under a good layer of short grass. Potatoes, though they, too, are much benefited by the same means in dry seasons, are better without it, as a rule, in case of wet setting—in autumn, and thereby aggravating the disease; but this, I think, is the only exception. The health of Gooseberry and Currant bushes is greatly promoted by mulching, and indeed all kinds of fruit trees, especially stone fruits; and newly-planted trees of all descriptions are often saved from perishing by a good top-dressing of rotten litter, and such-like, during summer and winter. In the flower garden mulching is not so admissible, but we generally practise it with Calceolarias, and the disease is unknown with us, though we have to contend with a dry cakey soil. The Iresine, too, should be mulched; it is a moisture-loving plant, and will thrive if mulched where it will sometimes not do any good otherwise.

In Vine and Peach borders, whether inside or outside, I consider mulching almost indispensable. In some places where they are raked painfully smooth and neat, I have seen them so rent with the drought during summer, that a man had to go over them every week to fill-up the cracks. Good Grapes are seldom to be found under such circumstances. A mulching 4 or 5 inches thick of rotten litter and leaves is best for Vines, and a border so dressed need never offend an eye not painfully sensitive on the score of neatness. Large plants in pots, such as Figs, pot Vines, Pines, orchard-house trees, &c., should also be mulched when practicable, as roots are often near the surface, and are apt to suffer from irregular attention in watering.

Apart from the advantages of mulching in a labour-saving respect, and as a conservative agent as regards moisture, it keeps the soil about the roots at an equable temperature by preventing radiation in cold weather, and the bare soil from the roasting effects of the sun in warm weather—a condition of things very unfavourable to vegetable life generally.—J. S. W. (in *The Gardener*).

### NOTES AND GLEANINGS.

DR. VOELCKER has been examining the soil of ONE OF THE LONDON SQUARES, with the view of discovering why Plane trees had twice refused to live in it. The soil was treated with distilled water and filtered, when the solution was found to contain 0.1 per cent. of common salt, and 0.2 per cent. of nitrates, a proportion sufficiently excessive to account for the failure of the trees.

THERE are a very few plants which are uni-local, and prominent among these is the KERQUELEN CABBAGE. One of the officers on board "The Challenger," writing to *The Hour*, says, "The Kerguelen Cabbage (*Pringlea antiscorbutica*) grew in considerable quantities in crevices and ravines leading down to the watercourses—in fact, in all sheltered situations. When cooked, although not unpalatable, it has a peculiarly bitter after-taste, which made me dislike it, but some of my messmates relished it highly. I afterwards tasted it mixed with Potatoes and fried with meat, when I thought it good. The ship's company had quantities cooked, and most of them relished it very much." Mr. A. Smith, in "The Treasury of Botany," says, "The sole representative of this genus of Cruciferae is *Pringlea antiscorbutica*, a remarkable Cabbage-like plant confined to insular Kerguelen's Land, and hence often called the Kerguelen's Land Cabbage. The genus is characterised by

its oblong seed pods being composed of two convex or boat-shaped valves without a partition between them, and by the seeds, which are numerous and in two rows, being heart-shaped at the bottom, but prolonged into a short beak at the top, and having accumbent cotyledons. The plant has a thick round root, often 3 or 4 feet long, and 2 inches in diameter, which lies along the ground and bears at its extremity a large cabbage, closely resembling the common Cabbage of this country, having a dense white heart and loose green outer leaves; its flower stems grow out from below the principal leaves, and are from 2 to 3 feet high, with their lower part more or less leafy. The whole plant abounds with essential oil, and when cooked the cabbage tastes like tough Mustard and Cress. Being a powerful antiscorbutic, it is invaluable to the crews of ships touching at Kerguelen's Land. Dr. Hooker says, "During the whole stay of the 'Erebus' and 'Terror' in Christmas Harbour, daily use was made of this vegetable, either cooked by itself or boiled with the ship's beef, pork, or pea-soup. The essential oil gives a peculiar flavour, which the majority of the officers and the crew did not dislike, and which rendered the herb even more wholesome than the common Cabbage; for it never caused heartburn, nor any of the unpleasant symptoms which that plant sometimes produces."

— A SPECIAL General Meeting of the ROYAL HORTICULTURAL SOCIETY is to be held in the Council-room, at South Kensington, this day, at three o'clock, P.M., for the purpose of authorising the closing of the Society's Gardens, except on payment, in the event of an evening fête being given.

— THIS is now the season of the RHODODENDRON SHOWS. Mr. A. Waterer has a large extent of ground charmingly filled at the Royal Horticultural Society's Gardens, South Kensington; Messrs. John Waterer have this year taken up their quarters at Russell Square; and Messrs. Lane, of Berkhamstead, have taken advantage of the artificial hills and dales of the Regent's Park, and they may be congratulated on their choice with a view to effect.

### A FRENCH FLOWER SHOW.

THE Society of Horticulture of the Seine and Oise held at Versailles a week or two since its annual Flower Show. The large tent which is used for such shows was too small to contain all the flowers exhibited, and which were arranged in very good taste. The Show was a greater success than those of the preceding years. This was due especially to the Council of the Society having inaugurated a new plan. To encourage the exhibitors it had been decided that, notwithstanding the medals awarded at every show, a sum of £40 should be given in prizes of £1 each to the best forty exhibitors. This proved very successful. The exhibitors were very numerous, and there is no doubt that if in future the Society can give higher prizes in money its shows will improve. Visitors do not usually understand what trouble is incurred in bringing together such fine plants. The trouble and outlay of money very often prevent young nurseriesmen from exhibiting; many of them are not rich, and it is a great boon if they can be rewarded in money.

Messrs. Vilmorin & Co., of Paris, carried off the "Prix d'honneur," consisting of a gold medal worth £16, given by the "Dames Patronesses." Mr. Moser, of Versailles, obtained the first prize for splendid Rhododendrons in full bloom. Some fine specimens were to be seen of the new *Dracœnas Baptistii* and *Mooreana*, and *Aphelandra Fascinator*, which I hope will soon be found in every drawing-room. This collection, as well as one of Rhododendrons in splendid condition, and one of sundry hothouse plants, was exhibited by Mr. A. Truffaut, of Versailles, who took the gold medal given by the Minister of Agriculture. I must not omit to mention the splendid *Azaleas* and *Palms* of Mr. David. Mr. Duval, who every year obtains such a well-earned success with his *Gloxinias*, carried off the gold medal given every year by Madame Heine, of Rocquencourt. Messrs. Poirier and Christen had each a fine collection of *Roses*. The best we saw were *Jules Sureau*, Countess of Oxford, *Marquise de Castellane*, *Thérèse Levet*, *Madame Moreau*, *Victor Verdier*, &c. Messrs. Crémont, of Sarcelles, had some beautiful *Pine Apples* and large *Peaches*.

I must not conclude without mentioning the splendid *Asparagus* shown by Mr. L'Hérault, of Argenteuil, and Mr. Renot, of Le Chesnay. These *Asparagus* girthed as much as 6½ inches.—  
ERNEST BERGMAN, F.R.H.S.

### DOINGS OF THE LAST AND PRESENT WEEKS.

#### HARDY FRUIT GARDEN.

WALL TREES require a large share of attention this month, and if they are neglected, either by allowing the young wood to grow

wild or the trees to become a prey to insects, no satisfactory results can follow. A few of our trees have been persistently attacked by the aphid tribe, but the larger proportion of the trees are quite free from it. The black aphid is usually found at the ends of the young shoots, and if allowed to increase the young leaves curl up and ultimately wither. Syringing with different sorts of mixtures has been recommended to destroy it, and a solution of soft soap and tobacco liquor will do this; but the difficulty is to apply it so that it will touch the insects. A much more effectual method is to dip the points of the shoots where the insects are clustering into a hand-bowl; a man can easily hold the bowl in one hand, while he dips the shoot with the other; the liquid will thus penetrate into all the curls of the leaves, and the enemy is instantly destroyed. The operation cannot be performed after the young wood is nailed-in; it will therefore be necessary to see that the leaves are clean before this is done. Where trees are unhealthy they are the more liable to attack. A wall of Morello Cherries has been cleansed twice, and we have again gone over the trees this week. Pear trees on an east wall require attention, and would be done at once if time could be spared. The trees are trained horizontally, and what is understood by a horizontally-trained tree is this: One main stem is trained in an upright position, and side branches are trained in a horizontal manner from this, opposite to each other, not less than 9 inches apart, or more than a foot. The larger the tree the greater should the distance be between the branches. On brick walls the width of three bricks should be allowed between each branch. When these branches are once securely fastened, no farther nailing is required until the shreds or ties rot; and the only treatment required at present is to cut back all the young wood to two or three leaves. The Pear and Apple are the only varieties of fruit trees adapted to this system of training; and for them it answers better than any other. The Cherry trees will have the young wood nailed-in where it is required as soon as it is cleansed from insects. All superfluous wood must be at once removed. No Peach or Nectarine trees are planted on any of our walls, the supply of fruit being obtained from an orchard house at the season that the out-of-doors fruit would come in. All wall trees of this description must be clean; and if the pressure of work is such that time cannot be spared to give the necessary attention to the trees, it would be far better to root them out and plant choice Pears in their place. These do not require a tithe of the attention that Peaches and Nectarines do. All superfluous growths must be thinned-out, and no more young wood allowed to remain than would be necessary to bear fruit next year. The fruit must also be thinned-out with a liberal hand. Over-cropping is fatal to the production of good fruit, and is a serious injury to the future health of the trees.

#### FORCING HOUSES.

As there is nothing to do in the early vineries except to cut the fruit as it is required, the "doing" in that department will be almost nil for some time to come. The inside border had become dry in two of the houses, and it was necessary to water it. It is not conducive to the health of the Vines to allow this to happen. The Grapes had shown some signs of shrivelling. This they will do in very hot weather after having hung ripe for six weeks, but in this instance they had not been ripe nearly so long as that. In the late houses the growths had been allowed to go on freely when the fruit was setting. They had been stopped a few days before the first flowers opened, and we have a fancy that it is better not to do any stopping when the Vines are in flower, as doing so must have a tendency to check the growth, and might cause some of the shy-setting varieties to "set" badly. The growths were all stopped when the fruit was set. Have been thinning the Grapes in both late houses. All fruit intended to hang until spring should be well thinned-out; large compact bunches look remarkably well on an exhibition-tray, but will not remain in good condition long after Christmas.

#### PLANT STOVE.

The recent sultry weather has told upon all flowering plants. Orchids seemed to suffer more than others. Some of the *Deandrobiums* would not last more than a few days, the most fragile of all is *D. densiflorum*. *D. Devonianum* also lasts but a very few days in beauty in hot weather. If the plants are removed to a cool house with a dry atmosphere they last much longer in beauty. In gardens such as ours, where the houses are small, the more rampant-growing of stove plants are soon out of all bounds; when such is the case it is much better to strike cuttings annually, and grow-on young plants. One of the most useful of winter-flowering plants is *Eranthemum pulchellum*. Its intensely blue flowers are produced in great abundance, but it is a rapid-growing plant, and cuttings struck in the early spring months make fine flowering plants the following winter. The rooted cuttings were potted-off about six weeks ago; the plants have been stopped, and about the end of June will be shifted into the pots they are intended to flower in. They grow well in a mixture of turfy loam and peat. Potted *Poinsettia pulcherrima*, and placed the plants in a house where they are not too much shaded from the sun. A cool greenhouse is the

best place for these plants to make their growth, and in July and August they may be arranged on a bed of ashes in a sheltered position out of doors with advantage. *Thyracanthus rutilans* has flowered splendidly with us this year, a succession has been kept up for at least three months. The cuttings of these are struck in the same way as *Eranthemum*, and require similar treatment. Green fly has been troublesome, and fumigating with tobacco smoke is dangerous at this season when Orchids, Ferns, and other tender subjects are making young growths. On plants that it is not desirable to syringe, the aphid has been brushed off with a small camel-hair brush, and in other instances they have been washed off.

#### FLOWER GARDEN.

In our soils Roses used to suffer much during continued dry weather; the soil has little holding power, and the roots can get no sustenance in the dry subsoil of gravel or loose sand. In one instance the substratum of poor soil and gravel has been removed, some loam of a more clayey character and rotted manure added. Another the bed intended for the plants was as deeply trenched as the nature of the soil would admit of; a layer of manure was laid in the bottom of the trench, some soil placed over this, then another layer of manure, and about 3 inches of soil on the top. This treatment causes a luxuriant and healthy growth, with more freedom from insects. The plants are flowering strongly, and a good soaking of water, mulching the ground afterwards with rotted manure, would be beneficial. *Gladiolus* are growing very strongly, the soil has been prepared for them in a similar manner to the Rose beds. The roots that were planted early have been watered, the later-planted have not as yet required any. *Hollyhocks* showed signs of distress last week, but time could not be spared to attend either to them or the *Phloxes*, although scarcely any class of plants are so much benefited by copious waterings as these are. We were truly glad to receive a good shower of rain on Saturday night. Rather more than half an inch fell, which will save them for the time. Placed sticks to them after thinning-out superfluous growths, the *Phloxes* to four or five growths, and the *Hollyhocks* to two or three. The best *Hollyhock* spikes are obtained from young plants raised from cuttings or grafts early in the year, and if they are intended for exhibition it is quite necessary that they be managed in this way; but for decorative purposes two-year-old plants with three stems are the best. We had watered the beds in the flower garden and dressed the surface with rotted manure, and this, with the rain, will cause *Verbenas*, *Calceolarias*, and other subjects that suffer from drought to start into free growth.—J. DOUGLAS.

### PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

JUNE.	JUNE.
Leeds ..... 10, 11, and 12	Brockham (Rose) ..... 23
Gloucester and Cheltenham ..... 11	Stamford ..... 23 and 24
Royal Oxfordshire ..... 16	Nottingham ..... 24
Gosport ..... 17	R.H.S. of Ireland ..... 25
Chertsey ..... 17	Cambridgeshire ..... 25
Burton-on-Trent ..... 17	Hereford ..... 25
Thorne ..... 17	Ipswich and E. of England ..... 25 and 26
Jersey ..... 17	Kingston and Surbiton ..... 25 and 26
Guildford ..... 17	Boston ..... 30 and July 1
York ..... 17, 18, and 19	Stratford ..... 30, and July 1 and 2
Fermoy ..... 18	Devon and Exeter (Roses) ..... 3

#### TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

BOOKS (A Reader).—The "Vine Manual" will suit you. It may be had from our office, free by post, for 2s. 7½d.

LILIUM GIGANTEUM (J. B.).—From your description we think it is that Lily. Dr. Wallich found it near the Himalayah Mountains, sent it to England, and it bloomed here for the first time in 1852. When it has commenced blooming it does so annually. You could obtain it from any of the florists who advertise in our columns.

BOIS IMMORTEL (H. G.).—We cannot tell what tree Waterton intended, and it is useless to speculate upon that or any other writer's meaning. We know that *Erythrina corallodendron* is called Bois immortel, and we know it is called *Bocare* in the Caraccas, where, in Trinidad and other places, it is planted to shade the *Theobroma Cacao*, or Chocolate-nt, yet that species only attains

a height of 20 feet; in fact, that stature is best for shading the Chocolate plants. *Erythrina glauca* is also called Bois immortel. E. indica, we see, is spoken of as l'Arbre immortel. We have now told all we can find on the subject.

SUMMER HOUSE FOR AURICULAS (A. C. S.).—This does not sound as a fitting place to put Auriculas in; if high up it would be too much exposed, and unless the light is moveable the plants would get too much scorched. Why not put them into a small frame in the ground? They would be happy there, but I doubt it in the position you name.—D., Deal.

INSECTS ATTACKING FRUIT TREES (—).—The larger species of weevil sent, which feeds on the wood and eyes of the trees by night, hiding under the soil during the day, is the well-known *Otiorhynchus punctatus*; and the smaller brighter-coloured species which feeds by day on the foliage is the weevil, *Nematus oblongus*. Shaking the trees over a sheet at the time when the insects are at work and then destroying the weevils by immersion in scalding water is the only available remedy.—I. O. W.

MILDEW ON ROSES (Amateur Scot).—You had better write to the proprietor of the composition for the information you require.

NAME OF ORANGE (M. S.).—It is *Citrus vulgaris myrtifolia*, Myrtle-leaved Orange. It is a native of India, introduced as long since as 1594 by Sir Francis Carew, and cultivated in his orangery at Beddington, in Surrey.

GREENHOUSE PLANTS MEALY-BUGGED (J. W. L.).—Your house must have a temperature more like that of a stove than greenhouse for the plants to be infested as you describe with mealy bug. From October to March the temperature from fire heat should not exceed 45° by day, and air ought to be given at that temperature. From February onward 50° should be the maximum from fire heat, air being given at that, and taken off at 50°; and whenever the temperature can be maintained at 50°, all air being given, or sufficient not to let it fall lower than 50°; you cannot give too much air, always reducing it as occasion requires, so as to maintain a temperature without artificial heat of 50°. Full ventilation should be given when the temperature reaches 55°, and not reduced until it falls to 55°. We fear your temperatures very much exceed the above, and we are not surprised at the advance of the mealy bug. With a lower temperature it would not make such rapid progress. The plants should be laid on their sides and syringed forcibly with water, turning them round so as to dislodge and wash off the bug, and they should be placed in their proper position after they have stood to dry and been again washed. They would be best operated on outside the house, which must be thoroughly cleaned. They should be frequently looked over, and any mealy bug in the angles and crevices may be removed with a brush, and, where comestible, with the hand, syringing the plants thoroughly with water as before described, the pots laid on their sides, and the insects washed off. This is a troublesome process, but an effectual mode of freeing pot plants of mealy bug. We should advise painting the house when the plants can be moved to a sheltered shady spot outside.

HOTELA JAPONICA AFTER FLOWERING (Idem).—We presume the plants are in pots, in which case, if they have flowered under glass, they should be planted out in rich light soil in the open ground, and be abundantly supplied with water. The leaves fall in autumn, as this species is an herbaceous perennial. The plants may be taken up after the fall of the leaves, be divided if too large, and potted, plunging them in ashes in a cold pit, from which they may be drafted at intervals into the houses for forcing.

PEARS NOT SETTING (Julius, Kidwelly).—Probably the border is dry. When the tree is coming into flower we should make holes a foot deep and about a foot apart with a crowbar, throw the border into furrows, so as to hold water, fill them with water, and after settling in repeat two or three times, finally levelling, and mulch with short manure. In autumn we should take out a trench at about 3 feet from the stem, cut off any roots that are thicker than a quill, and fill up again firmly with fresh moderately rich soil. The root-pruning will not be necessary if the growths during summer do not exceed 6 to 9 inches; and if root-pruning be practised, it will only be necessary to make holes in the undisturbed part next the stem prior to watering.

LIQUID MANURE FOR VEGETABLES (Idem).—Twice a-week is, in dry weather, often enough to water vegetables with liquid manure, and once a-week in moist weather; whilst, if very wet, manure watering is not necessary, it being better to sprinkle the dry guano between the rows of plants. One ounce of guano to a gallon of water is sufficiently powerful to apply twice a-week, and 2 ozs. to the gallon when the waterings are at intervals of a week or ten days. The wall trees may in dry weather be watered every ten days or a fortnight.

VINE BORDER WATERING (M. D.).—The border should have a thorough watering every ten days or a fortnight, and at the rate of one gallon per square foot, which is equal to about 2 inches of rainfall.

PEACH-HOUSE ARRANGEMENT (A Constant Reader).—We should have the front part of the house trellised at about 16 inches from the glass, and to within 2 feet of the ground, taking the trellis up to within 5 feet of the top, which will allow light to the trees on the back wall. You may have two trees against the latter, and two on the front trellis. What would be the good of trees on the back wall if they were trained up and down the roof-trellis as you propose?

THINNING PEARS (T. J. H.).—It is not, but ought to be, customary to thin the fruit of Pears when a heavy crop. It is best to do so gradually, removing the smallest fruit, and especially the ill-formed, taking them off clean with a knife, and not half the fruit at a time, as you propose. Three or four fruit to every square foot of surface are better than a greater number, and in most instances a sufficiently heavy crop. Have them all thinned by the time the fruit is fairly the size of a broad bean.

GRAPES SWELLING IRREGULARLY (Idem).—The small berries have no doubt not seeded, owing to imperfect fertilisation of the flowers, and not to any check afterwards. The only remedy is to maintain a good temperature at flowering time, and to go over the bunches when in full flower with a soft brush, and so assist the distribution of the pollen. The hand gently drawn down the bunches when in flower will also answer.

CUCUMBER DISEASED (J. W. B.).—The fruit forwarded us was damped at the end, and, of course, decayed, while the leaf was dying off, the evil in both cases arising from defective root-action combined with excessive moisture in the atmosphere, the soil being also wet, cold, and rich. The plants may recover if you give them an increase of bottom heat, and shade from bright sun, encouraging fresh growth, removing the old leaves as young ones are produced, and top-dressing with moderately rich soil, removing a little of the old surface soil. Water moderately, and keep a moist, well-ventilated atmosphere, sprinkling lightly at shutting-up time.

**CALCEOLARIAS IN POTS FAILING (J. H.).**—Failure in your case we think due to the plants having been kept in small pots until they were far advanced for flowering, and then shifted as they were—pot-bound—into larger pots, which would cause them to damp-off at the neck or collar. The only remedy is to shift the plants as the pots fill with roots into larger pots.

**ASPECT FOR FERNERY (T. W.).**—The wall facing due north will answer admirably for the back of a Fern house, which it will not be necessary to heat if you only grow hardy kinds, and they are better without it. If you have half-hardy or greenhouse Ferns, we should have the house divided by a partition, and only heat the division devoted to the greenhouse Ferns, the others being kept cold; though a single pipe, if the house do not exceed 12 feet in width, or two if it is more, would prevent any great degree of cold, artificial heat being only used in severe weather.

**ROSE SEEDLINGS DAMPING (G. W. J.).**—The Roses have undoubtedly damped-off owing to the frequent watering, the stems in their young state being soft, and probably placed too deeply in the soil. The seedlings should not be planted deeper than up to the seed leaves, and you will not save those that are dying-off by planting them deeper. Keep the soil drier, watering only when dry. It would have been better to have pricked them out in the open ground than to have potted them singly in small pots.

**ONIONS CLUBBING (G. C.).**—It arises from the young plants receiving a check from continued cold weather in an early stage of growth, or from a sudden check given by too heavy waterings, especially in a cold period. This malformation is mostly confined to the white kinds, which are more tender than the brown.

**GUANO WATER FOR CELERY (Idem).**—After the plants have taken good hold of the soil, until which they should be supplied with water only, commence with the guano at the rate of 1 oz. to a gallon of water, which is sufficiently strong if frequently applied; but if given at rather distant intervals, or say once a-week, it may be applied at double the strength, or 2 oz. to the gallon.

**BANKSIAN ROSE NOT FLOWERING FREELY (P. Q.).**—The want of flowers is probably due to the heat during the past season not being sufficient to ripen the wood, and the trees making luxuriant growth owing to the moisture. Thin-out the wood, especially the old bare growths, and do not prune, only thin-out to prevent overcrowding. With a good summer we think you will have flowers in plenty another year. Confine the pruning to shortening the long shoots to well-ripened wood, which need not be done until the buds are swelling early in spring.

**GENTIANA ACALUIS EDGING (Idem).**—We should have two rows of plants at a distance of 4 inches between the rows, and 4 inches apart in the lines, or 6 inches if the plants are 3 inches across, planting them quincunx fashion. You will require at 4 inches apart eighteen plants, and at 6 inches twelve plants per yard.

**VARIOUS (A. E.).**—1. Keane's "Indoor Gardening," which may be had post free from our office for 1s. 7½d., gives instructions for the management of indoor plants throughout the year. Special works on stove plants and Orchids are those of Mr. Williams. They are separate, and may be had through a bookseller. 2. Pea seeds may be preserved from mice by moistening them, and coating with red lead before sowing. 3. You cannot winter Geranium cuttings without a pit or house from which frost is excluded; but you may keep them in your dwelling-house, and best in the boxes in which they are struck. 4. The only thing to keep birds from the fruit of Currants and Gooseberries is to net them. 5. The only way to make walks hard and proof against weeds, is to form them of concrete or asphalt, the latter preferably. 6. You need but a small size of boiler, but we cannot recommend any one particularly. Write to those advertising in our columns, stating what you require. 7. It is cheaper in constructing a span-roof pit to have it 2 feet or so below the ground level, and have only a glass roof, with wood ventilators in the side walls. 8. Variegated white-leaved Geranium—Bright Star; white-flowered—The Bride; bronze—Marshall McMahon; rose—Master Christine; pink—Mrs. Upton; scarlet—Jean Sisley. 9. We could not say in what way you could best go to work to secure some pecuniary return from a stove and greenhouse. Consult some one experienced in the requirements of the locality, and strive to meet the demand. Your questions are far too numerous to send at once—more than two or three can be answered fully.

**PINE APPLES BLACK IN THE CENTRE (R. A.).**—The most probable cause of this is giving the plants manure water when the fruit is approaching the ripening stage. Should this not be the cause with you, let us know what your treatment has been.

**TREATMENT OF FIG AND PEACH TREES (A. C. H.).**—The Fig trees should not become leggy if the young growing shoots are pinched at every fifth leaf. It does not answer to cut the wood back, because the bearing wood is all found at the ends of the branches. You may cut back a few of the leggy branches this year, and more the following season, and thus gradually get the trees into good shape without losing a crop. Keep the Peach trees clean by syringing twice daily. The aphid must be destroyed by fumigating with tobacco smoke, or washing the trees with any of the mixtures destructive to these insects. Encourage the trees to make healthy young wood, and you will be sure of a crop next year.

**ROSES (J. Ficar's Widow).**—You must let us know your correct address.

**MEALY BUG (W. C. D.).**—Have every branch and stem brushed over sedulously with a hard brush, and then with a painter's brush as thoroughly painted over with this mixture:—Soft soap, 2 lbs.; flowers of sulphur, 2 lbs.; tobacco, 1 lb.; and a wine-glassful of spirit of turpentine. Mix the sulphur, turpentine, and soap into a paste with warm water; boil the tobacco for an hour in a covered saucepan in some more water, strain it, mix it with the soapy mixture, and then add enough water to make five gallons.

**NAMES OF PLANTS (H. M.).**—Buddleia glabosa, Round-leaved Buddlea. It is a native of Chili, and was introduced by Messrs. Lee & Kennedy exactly a hundred years since. (D. of R.).—Valeriana rubra, Red Valerian. It is a native plant, or has been so long introduced that it is found wild in many parts of England, Scotland, and Wales. (T. S.).—1, Phlox subulata; 2, Cotoneaster, perhaps microphylla; 3, Weigela japonica. (S. York).—1, Tradescantia discolor; 2, Epidendrum cochlearatum; 4, Begonia parvifolia; 5, Asclepias curassavica. (R. R.).—You can say Cerasus Padus if you prefer it, but you must not suppose that the Latin and English names of plants necessarily correspond. Your plant is Cotoneaster bacillaris. (Ben. Hall).—Ferns must be sent in fruit; 2, Davallia canariensis (?); 3 and 6, Pteris sp.; 4, Blechnum (?); 5, Asplenium fuscicollum. (J. S. B.).—Ethinonema grandiflorum. (F. E. T.).—Elaeagnus sp. (L. G.).—No; but we cannot say what it is from the specimen sent. (Young Subscriber).—Poa pratensis; 2, Dactylis glomerata; 4, Selaginella sp.; 5, Pteris cretica. (S. G., Torquay).—A Ceanothus

near Lobbianus. (S. G.).—2, Berberis aristata, var. (M. H. M.).—Coronilla Emerus.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### POULTRY HOUSES AND ACCOMMODATION.

BEFORE a favourable result can be obtained in poultry-keeping, it is absolutely necessary that the inmates have all that is required to promote health and comfort.

The accommodations which tend to further the well-being of poultry are few and elementary. Supposing that poultry will pay if properly managed, I will detail what I consider is best fitted to produce that result, and begin with their houses.

Fanciers whose aim is to produce birds up to the standard of excellence, and must therefore keep each variety separate to reach their design, do not mind the expense; but as it is my intention to add to rather than to take away from the pockets of fanciers, especially of amateurs, I decline to describe costly dwellings. All should make the most of the accommodation which exists in their premises. With a little ingenuity anyone can make comfortable quarters for fowls.

The exposure should be south, and a window facing east will give the advantage of the morning sun. If the house can be built adjoining a stable or cow shed so much the better, as, no doubt, the egg-supply in winter will be increased. Light is necessary to promote success, not only to enable the fowls to find the way to their nests, but also to keep them in health. The poultry-house must also be ventilated, either by a small skylight in the roof, or, which is still cheaper and equally effective, a moderate-sized hole as near the roof as possible, covering with a piece of perforated zinc. Draughts must be avoided. Cleanliness must also be regarded; the floors should be thoroughly cleaned at least twice a-week—that is, if there are many occupants. If the houses could be cleaned-out every day it would be far better.

I have found thatch roofs very useful, especially in the winter, at which time every precaution should be taken to protect the poultry from the cold. Snow falling on the thatch constitutes a warm and dry covering. A cheap and substantial roof is made of a crate, such as china and earthenware dealers have their goods in; take it to pieces and fix the sides on the poultry house, then nail a few laths across, cover these with some old bags, and finally tar the roof thickly, throwing sand all over to make it more waterproof and firm.

To prevent rats from coming up through the floor I have proved the following to answer admirably:—Dig about a foot or 2 feet deep, and fill-in with a mixture of gravel, pieces of slate, and lime rubbish, together with a sufficient quantity of tar, and then spread over this sand 2 or 3 inches deep. This will form a cheap and effectual flooring.—F. S. H.

### HYBRID BIRDS.

IN your issue of May 28th I observed a difference of opinion respecting the production of this "mongrel" species. Mr. Hewitt states, "All attempts to breed these birds with the Golden Pheasant cock and the common fowl have signally proved a failure." Here I differ, for I myself have bred them from such cross. From 1870 up to a very recent date I had a large number of almost every variety of Pheasants. In 1871 I had presented to me a most singular specimen of "fowls," which the captain of the ship who presented them to me called "Ajablés." They resembled most closely the barndoor fowl but somewhat smaller, were adorned with a goodly-sized topping, narrow tail, head somewhat erect, close-feathered, long in limb, and partly booted. Two of these I turned down with a Golden Pheasant cock, which, shortly after becoming associated with him, commenced laying, and continued so doing until late in the season of 1871. In February, 1872, thinking to try an experimental production with this cross, I sat a sitting on eight or ten of their eggs, which produced five singular-looking birds. When they came to maturity they were the most unique "hybrids" I ever saw, and several of them are still in this country.—A BOSTONIAN.

### NOTES FROM A POULTRY-YARD.

SINCE the circumstance recorded by your correspondent, Mr. G. Ware, is, as you state, interesting to you and your readers, I venture to think the following facts may be equally so. On the 11th of December last I placed thirty-one eggs, chiefly mongrels, under three hens. Two of them, on eleven and nine eggs respectively, were in confinement; the other, on eleven eggs, was allowed to remain in the nest of her own selection. On the 1st of January the two hens in confinement produced nineteen chickens, and the one on the nest of her choice brought off five. The twenty-four chicks were placed with two of the hens, while a new sitting of eleven was put under the little hen

that had hatched the whole of her nine eggs; and, before proceeding farther, I may state that on the 21st of January ten out of the eleven were hatched. Of the twenty-four chickens hatched on the 1st of January, twenty-three were reared. The twelve cockerels have long since come to table, and the eleven pullets have produced me nearly two hundred eggs. The first, a pure Dark Brahma, commenced to lay on the 25th of April. The two hens that reared them were laying again in the first week in February, and both had hatched new broods by the first week in April.

The history of the little hen that hatched nine chickens on the 1st, and ten on the 21st of January, was that when she was but a few days old, through an accident she became an orphan. A Silver-pencilled Hamburg, so lame that she could not roost, and that had never laid, voluntarily adopted and reared the chick, clucking and brooding as though she had hatched it.—AN AMATEUR.

## THE POULTRY-KEEPER.—No. 6.

### THE HOUDAN HEN.

#### PROPORTIONS AND GENERAL CHARACTER.

**Body.**—Compact, almost more bulky in appearance than the cock, firmly set on strong feet. Breast, thighs, legs, and wings well developed. Head large, half or whole-crested. Whiskers and cravat very full. Comb and gills very small. Five toes on each foot. Feathers of the abdomen spread out, pendant, and

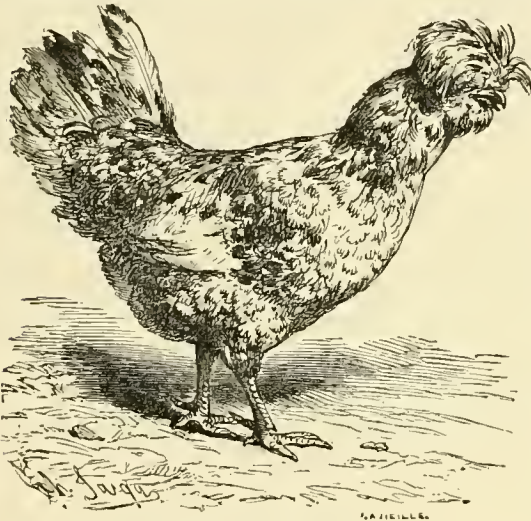


Fig. 12.—Houdan Hen.

abundant, the other feathers of an ordinary length. Plumage spangled black and white, with violet and green iridescence (see fig. 12).

#### WEIGHT, SIZE, AND CHARACTERISTICS.

**Weight.**—When full-grown from 5 lbs. 8½ ozs. to 6 lbs. 10 ozs.

**Size.**—From the upper part of the crest to the feet in an ordinary position, 15½ inches; from the back to the feet, 11.8 inches.

**Head.**—Large (see fig. 13).

**Comb.**—Small.

**Ears.**—Small.

**Gills.**—Small.

**Beak.**—Strong, dark grey and yellow.

**Eye.**—Iris, reddish yellow. Pupil, black.

**Crest or Half-crest.**—Sometimes the crest entirely envelopes the head, and rises from close behind the beak. It is composed in that case of large feathers superposed like the others in a globular form, and is as handsome as the crests of other varieties. At other times the crest is not so



Fig. 13.—Houdan Hen's Head.

large, and composed of irregularly-placed feathers, pointed and bent. Either of these forms equally characterises the variety.

**Whiskers.**—Small.

**Cravat.**—Abundant, thick, but not coming down very low.

**Physiognomy of the Head.**—When the crest is fully developed the hen can neither see at the side nor in front, but only on the ground, because the feathers which occupy the eyebrows cover the whole eye, giving the hen a featureless character on hearing the least sound; and it is not without particular attention, and looking well beneath the crest, that the eyes can be seen.



Fig. 14.—Houdan Hen's Foot.

**Foot and Sole of Foot (fig. 14).**—Strong, fleshy, and provided with five toes, like that of the cock, similarly arranged.

**Colour of Foot.**—Like that of the cock.

**Laying.**—Precocious and abundant in producing fine eggs.

**Incubation.**—Tims, three weeks.

#### DESCRIPTION OF FEATHERS.

The entire plumage, composed of feathers of ordinary size, is spangled—that is, mixed with feathers sometimes black, sometimes white, and sometimes black and white; sometimes black at the beginning and white at the tip, and *vice versa*, but on the back, shoulders, the sides of the breast, and the feathers covering the great tail feathers, showing generally spots more decided, less mixed at the sides, the belly, and the crest. The large tail feathers and those of the flight are equally mixed with black, white, or spotted feathers; but it is better when they are all white.

#### GENERAL CONSIDERATIONS.

The Houdan is one of the most beautiful varieties of fowls, and nothing is more imposing than a yard full of Houdans, but its merits far exceed its beauty. Besides the lightness of its bones and the quantity and delicacy of its flesh, it is a variety to be admired for its early productiveness and fecundity. The chick-na in four months can be fattened and acquire great size.

The hen produces very fine chickens, and of all the varieties the hen approaches in weight nearest to that of the cock. They are precocious and abundant layers of a fine, white, considerable-sized egg. The pullets begin to lay in the month of January.

The variety is a farmer's fowl, and is more easily raised than any of the French indigenous varieties. It is also less roaming, less plundering than many of the others.

It is only an ordinary-brooding hen, like all hens which lay long and abundantly; but she sits fairly and brings-up the chickens carefully.

## BATH AND WEST OF ENGLAND SOCIETY'S BRISTOL POULTRY SHOW.

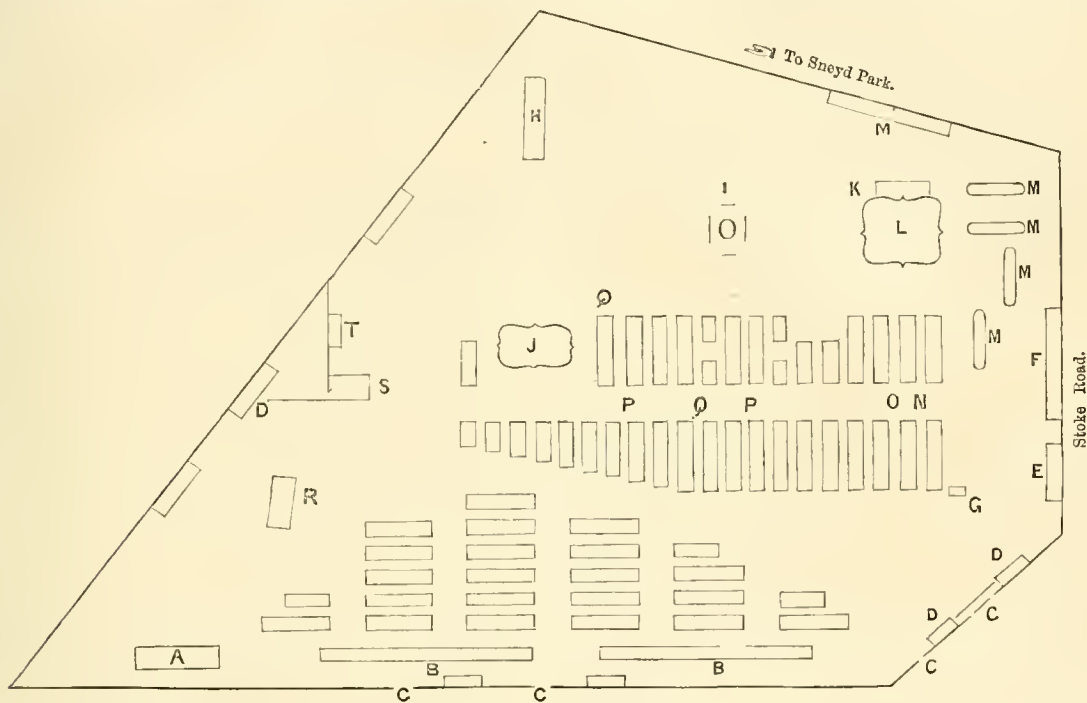
NOTED as have been the meetings of the Bath and West of England Society for the excellence of the poultry for a long series of years, it is most gratifying to announce that the collection now on view at Clifton far surpasses in numbers any of its predecessors, and in not a few of the classes the superiority of the competition is certainly not less manifest. In speaking of the general arrangements, we need only say that the same diligent care and forethought that have caused the prior meetings to become so popular were again fully shown by Messrs. Bush & Edwards, the Stewards of this department. The poultry tent was one of the largest we can bring to recollection, and the exhibition pens were such as to call forth general approval. The weather, too, was such as lends a charm to all out-of-door pursuits, and the local beauty of Clifton it would be needless to recapitulate. With such advantages the meeting of the present year will hold favourable contrast with every one preceding it; and as regards the attendance, the poultry tent proved the most attractive and popular spot in the whole area of thirteen acres, as occupied this year by the widely-different exhibits of the Bath and West of England Agricultural Society.

Spanish fowls have always found their home among the poultry fanciers of Bristol, and certainly this year's collection is well calculated to support the notoriety of Bristol as to this popular breed of poultry. Mr. Edward Jones, of Berkeley Place, Clifton, held his own in a very severe competition, and with two pens (one of either sex) was successful in obtaining not only two first prizes and two silver cups, but also the champion cup for the best cock of any breed in the whole Exhibition. Perhaps the history of events in all poultry exhibitions fails to record such a singular amount of success, and the triumph was well deserved; for, considering the lateness of the season, rarely, if ever, has Spanish fowls been shown in so thoroughly creditable condition as those by Mr. Jones, of which we are now speaking. The quality of the face of all this gentle-

man's birds is perfection itself; for whilst its ample development could not fail to satisfy the most fastidious amateur, the kid-like quality of face in each one of the birds was equally praiseworthy. A few of the very heavily-corrugated faces, that in aged Spanish cocks generally lead to total, or at best partial, blindness, were to be met with in these classes, and served by contrast to heighten the popularity of the successful pens. Throughout extensive classes the Grey *Dorkings* showed to considerable advantage, as shabbiness of plumage generally prevailed; but it is well known there are few breeds that, on the eve of moulting, are so apt to show broken plumage as the *Dorkings*. Mr. C. Burnell, of Micheldever, Hants, and Mr. Samuel Lang, of Westbury, however, exhibited some of the successful pens in very creditable feather. The White and Cuckoo *Dorkings* were especially good, and most of them well shown.

As a rule the Buff *Cochins* were not so good as have been entered at previous shows, but not without some few marked ex-

ceptions. The cup cock shown by Mr. Harris, of St. Day, Cornwall, was a remarkably clear-coloured well-grown specimen, and the pair of cup hens exhibited by Mr. Crabtree, of Levenshulme, Manchester, were particularly so. We regret to say a sad annoyance took place in respect to the latter pen. The award had not been made longer than a quarter of an hour or so before it was found out that the better hen of the two had died suddenly, although not manifesting any previous indisposition. Of course that award remained unchanged, but it prevented them running in very closely at the least for the champion cup for the best pair of hens. For the latter prize Mr. Edward Tudman, of Ashgrove, Whitchurch, Salop, entered a pen that possibly has never been equalled for purity of feather and equality of character. Those hens were most beautifully pencilled throughout the whole plumage, even the very feathers on the legs and toes being equally well marked, a characteristic so rarely seen nowadays, rendering this one of the most attractive features of



PLAN OF THE SHOW-YARD AT BRISTOL.

- |                         |                      |                 |                  |                     |
|-------------------------|----------------------|-----------------|------------------|---------------------|
| A, Poultry tent.        | E, Councill tent.    | I, Band stand.  | M, Horse boxes.  | Q, Refreshments.    |
| B, Machinery in motion. | F, Sheds.            | J, Shrubbery.   | N, Sheep.        | R, Picture gallery. |
| C, Gates.               | G, Telegraph office. | K, Grand stand. | O, Cattle.       | S, Floe arts.       |
| D, Offices.             | H, Horticulture.     | L, Horse ring.  | P, Manufactures. | T, Cloak room.      |

this year's collection. White *Cochins* were mostly in bad condition, but a few pens of very good early chickens were exhibited. The classes for *Brahmas* proved the largest entries among the poultry, but, with the exception of the prizetakers, they were not equal to what might reasonably have been expected; in fact, the Light-feathered *Brahmas* were, as classes, decidedly an inferior collection. It will be seen Messrs. Lingwood, Wright, Watts, and Dean were the chief prizetakers.

In *Game* want of high condition among the cock classes was a general fault, which, however, served only still more to heighten the appearance of those in feather; the hens of the *Game* fowls were mostly in good feather. Of *Hamburgs*, so far south there has never been so good a collection, the Golden-spangled, Silver-spangled, and Golden-pencilled more especially. Although, as customary, the northern counties managed to secure the majority of the *Hamburg* premiums, many new names resident far south closely competed—a somewhat new feature in these breeds. It is well so deservedly popular varieties are now extending themselves. *Polish* fowls were quite in the ascendant, but every variety being admissible, the awards were too limited for so praiseworthy a collection. *French* breeds mustered in very strong force, mostly very superior in character, *Crèves*, perhaps, being the most perfectly represented. In the Variety classes, the most extraordinarily good Black and White *Minorcas* took the prizes in the hen classes; and in the Variety cock class a Black *Hamburg* and good old-fashioned *Malay* were the winners, among an entry of great excellence and numbers. With so heavy entries, perhaps another

season this division of the prize list may justly call for an enlarged amount of encouragement, by the increase as to the number of prizes offered.

Of *Turkeys*, this Show was especially a grand one; and although this district has for many years been pre-eminent for these birds, the prizes were obtained by specimens sent from a distance. *Geese* were a limited entry, but of superior character.

Although both *Aylesbury* and *Rouen Ducks* of extraordinary good quality were numerous, the last-named variety securing the cup for Ducks, it was strange that only one entry was made in the class for fancy *Waterfowl*. It proved to be a good pen of *Carolinas*; but why with the same amount of prize money offered, this pen should enjoy a walk-over, it is difficult to explain.

Bristol enjoyed a fine show of *Bantams*, the cup going to such a pen of Silver-laced *Sebrights* as have not been exhibited for many years past. Black-breasted Red *Game* and Brown-breasted Red *Game Bantams* were decidedly good, and the Black *Bantams* were both numerous and excellent; but White *Bantams* appear of late to have been altogether unrepresented by the beautiful specimens of former years. This is not as it should be, for when of good quality and well shown, few of the smaller kinds of poultry "pets" are more choice and interesting. There is a good opening for any persevering breeder to take the initiative. Among the many *Bantam* fanciers will no one come to the rescue, and prevent this really pleasing variety being lost altogether? In a generally open class for cock *Bantams* of every description, Black Red *Game* secured both prizes, very good



Brown Reds, and altogether have won a number of prizes. The third-prize Black Red cock carried his wings a little too low—in fact the Judge considered this the great fault all through the Game Bantams. In any other variety of Bantams a perfect pair of Silver Sebrights won first, Black Rose-combs second; and a well-marked pair of Gold Sebrights third. The first-prize pair of Black Rose-combs at the last Plymouth Show had to content themselves with highly commended; and we think that the pair of White-booted that were commended should have had an extra third at least. The single cock class contained some good birds. The first-prize bird was a good Dark Houdan, second a grand Dark Brahma, and third a very good-coloured Partridge Cochins. A gamey-looking Brown Red was highly commended, but seemed to be out of condition, and no doubt would have won had it not been for this reason. A Duckwing cock, first at the Bath and West of England Show and first at Bristol, was passed unnoticed. In the Selling class, pair of hens, a very neat pair of Black Reds were first, and a capital pair of Golden-pencils second; a pair of small but almost perfect White Cochins third. A pair of Black Spanish hens highly commended we consider should have been placed. A grand White Cochins cock won first in the Selling class, and was soon claimed. The first-prize pair of Rouen Ducks were perfection. In the Aylesbury class faultless birds were first, and a very nice pair second. The first in the Ornamental Fowl, any variety, were a most perfect pair of Golden Pheasants, and second a pair of Silvers equally good.

PIGEONS on the whole were good, but the entries in most of the classes were small. In Carriers a pair of grand-styled heavily-wattled Reds won first, second being a nice pair of Blacks scarcely so good in beak-wattle and eye as the first-prize birds. Whites won first in the Pouters, and good Blue pids second. The first-prize pair of Barbs (Blacks) were really capital birds, a fair pair of Reds winning second. Fantails were only moderate, Whites being first and Blues second. In Tumblers a pair of Black Mottles won first, and very good Almonds second. Antwerps were a fairish class, the first prize going to a magnificent pair of Meales; good Silver Duns second. Pens 261 and 262 deserved being noticed, we think. The Any other distinct variety class contained the largest entry in the Pigeon classes, numbering eighteen pens. First were a lovely pair of White Owls fit to win in any competition; Black Trumpeters second; and a very good pair of Blue Foreign Owls were highly commended. The Selling class was about the average quality, and contained one or two pairs of cheap birds. A pair of Almond Tumblers took first, closely followed by a moderately good pair of Black Trumpeters. A pair of pretty fair Blue Turbits were highly commended, but were not a good colour.

**DORRINGS—Coloured**—1, H. Feast, Swansea. 2, C. Gray, Biscovey. 3, O. Vincent, Truro. **Silver-Grey, or any other variety**—1, P. Rundle, Lostwithiel. 2, J. H. Nicholls, Lostwithiel. 3, Withheld.

**ANCIENTS—Buff, White, and Cinnamon**—1, J. H. Nicholls. 2, Mrs. Allsop, Worcester. 3, S. E. Harris, Cusgarne. **Partridge and Brown**—1, G. Lias, Par. 2, H. Yardley, Birmingham. 3, J. H. Nicholls.

**BRAHMAS—Dark**—1, Viscountess Chetwynd, Exmouth. 2, T. H. Waterman, Anderton. 3, H. Feast. **Light**—2, S. E. Harris. 3, S. Probert, Lostwithiel.

**GAME—Black Reds**—1, W. T. Lovering, St. Austell. 2, C. E. Pope, Falmouth. 3, H. Coon, St. Austell. **hc**, J. Baker, St. Austell. **Brown Reds**—1 and 2, H. Browne, St. Austell. 3, W. K. Bullmore, Falmouth. **c**, W. T. Lovering.

**Any other variety**—1, F. Winwood, Worcester. 2, C. E. Pope. 3, H. Browne. **hc**, G. Julian, Wadebridge. **c**, J. H. Martin, St. Austell.

**SPANISH**—1, Mrs. Tonkin, Bristol. 2, H. Feast. 3, J. Bassett, Lostwithiel. **c**, J. Bassett; **hc**, H. Nicholls.

**POLANDS**—1, S. E. Harris. 2, H. Feast. 3, G. Lias. **hc**, Miss F. Solomon, St. Blazey. **c**, S. Probert.

**HAMBERGS—Gold-spangled**—1, W. Webster, Bodmin. 2, N. Barter, Plymouth. 3, H. Feast. **Silver-spangled**—1, S. E. Harris. 2, H. Feast. 3, W. Phillips, St. Austell. **hc**, N. Barter.

**HAMBERGS—Gold-pencilled**—1, H. Moore, Weston-super-Mare. 2, T. Edmonds, Totnes. 3, J. H. Appa. **hc**, G. Lias; **hc**, J. H. Nicholls. **Silver-pencilled**—1, H. Feast. 2 and 3, N. Barter.

**FRENCH—Any variety**—1 and **c**, W. H. Coppleston, Lostwithiel. 2, H. Feast. 3, G. W. Hibbert, Manchester. **hc**, Mrs. Borrow, Lanivet.

**ANY OTHER DISTINCT VARIETY**—1, A. H. Tyack, Camborne. 2, J. Croate, jun., Wellington. 3, Miss S. Avery, Liskeard. **hc**, W. Hobba, St. Ewe; **W. Saundry, Pool**; **hc**, J. Blamey, Penryn.

**BANTAMS—Game**—1, T. H. Mudge, Bodmin. 2, W. Cunnah, Tywardreath. 3, T. S. Hoekaday, St. Austell. **Any other variety**—1, C. H. Poole, Bridgwater. 2, J. H. Nicholls. 3, E. G. Stocker, St. Austell. **hc**, Miss B. Stocker, St. Austell; **F. Braund, Bideford**; **hc**, J. Pearson, Liskeard. **c**, J. Honey, St. Austell.

**ANY VARIETY—Cock**—1, J. Godfrey, Liskeard. 2, W. Denner, Tavistock. 3, J. Lias. **hc**, W. T. Lovering; **hc**, J. H. Nicholls. **c**, T. J. Lobb, Wadebridge.

**SELLING CLASS—Cock**—1, J. H. Nicholls. 2, W. Humphreys, Liskeard. 3, W. T. Lovering. **hc**, H. Feast; **hc**, W. H. Completion. **c**, J. Croate, jun. **Hens**—1, J. T. Browne. 2, H. Hodge, Portphar. 3, J. H. Nicholls. **hc**, W. Honey, St. Austell; **F. E. Stocker**; **hc**, J. H. Nicholls. **c**, T. H. Waterman, Anderton; **S. Probert**.

**DUCKS—Rouen**—1 and 3, J. H. Browne. 2, J. H. H. St. Austell. **hc**, E. Martin, Aylesbury. 1 and 3, S. E. Harris. 2, W. S. Cart, Torpoint.

**ORNAMENTAL FOWL—Any variety**—1 and 2, R. G. Lakes, St. Austell (Gold and Silver Pheasants).

## PIGEONS.

**CARRIERS**—1, E. Burton, Truro. 2, F. Hayman, Exeter.

**POUTERS**—1 and 2, H. Yardley, Birmingham.

**BARBS**—1, J. D. Mole, Exeter. 2, H. Yardley, Birmingham. **c**, J. J. Hill, Penzance; **E. Burton**; **hc**, J. T. Browne.

**FANTAILS**—1, G. Packham, Exeter. 2, H. W. Webb, Sydenham. **hc**, H. Yardley.

**TUMBLERS**—1, H. Yardley. 2, E. Burton. **hc**, G. Packham.

**ANTWERPS**—1, J. Baen, Lostwithiel. 2, H. Yardley.

**ANY OTHER DISTINCT VARIETY**—1, F. Braund, Bideford. 2, J. Broad, Plymouth. **hc**, J. J. Hill; **H. Yardley**; **hc**, W. Webb; **J. P. James, Hereford**. **c**, C. Hawke, St. Columb; **J. J. Hill** (2).

**SELLING CLASS**—1, E. Burton. 2, H. W. Webb.

## WOOD PIGEON AND DOVECOTE PIGEON PAIRED.

Is it not possible that "T. G., *Clitheroe*," makes some little mistake, wholly unintentional of course, in what he narrates to us last week under the above heading? The whole turns upon the meaning of the north-country word "scar." I cannot find it in any English dictionary which I possess, and only remember its being used by Wordsworth in "Peter Bell" in these lines—

"And he had trudgeth through Yorkshire dales,  
Among the rocks and winding scars,  
Where deep and low the hamlets lie  
Beneath their little patch of sky,  
And little lot of stars."

The word "scar" seems here to mean what we in the west of England call a "combe," a hollow somewhat narrow between steep hills. Thus there is Castlecombe in Wilts, and Englishcombe near Bath. If the word "scar" in the account refers to the side of the hill, or rather rock, surely the bird that paired with a dove-cote Pigeon was a Rock Dove, *Columba livia*, which is natural enough; but the Cushat, Quest, Ring Dove, or Wood Pigeon is wholly arboreal, nesting in trees, and does not pair with the common Pigeon (*vide* Brent, page 7). The Stock Dove, *Columba oenas*, has been known to breed with the domestic Pigeon, but it usually is arboreal in its habits, though it lays sometimes in a deserted Rabbit-burrow, and even in cliffs.

The account that "T. G., *Clitheroe*," gives is very interesting; but unless he is a skilled naturalist I incline to think that the wild Pigeon he mentions was most probably a Rock Dove, or less probably a Stock Dove. If a Ring Dove or Wood Pigeon (the large bird) the case is very singular. Perhaps "T. G." will favour us with another word on the subject, and the meaning in Lancashire of the word "scar." I write simply from interest and desire of acquiring knowledge.—WILTSHIRE RECTOR.

## BUILDING A PIGEON LOFT.

A PIGEON LOFT ought to be built to the south or south-west, the sun lying warmest on them from those quarters; but if you have not that convenience you may make a hole in the roof of your house, and there lay your platform, smaller or larger as you think proper. A carpenter that is used to such work will put you in a method, always remembering to erect proper works to keep off those tormentors of the gentlemen of the fancy—the cats, for in one night's time they will make a very great havoc, and are generally observed to destroy those Pigeons which you most value; so that it is better to be at some charge first, to prevent the incursions of such dangerous and fatal invaders, who seldom or never give any quarters.

Let your loft be large enough to contain the number of Pigeons you intend to keep, always allowing at least two holes or breeding places for every pair; for the more room they have the more quiet they will sit, and breed the better. I once knew a gentleman who could not raise three young ones out of nine pair of breeding Pigeons all the spring, and for above three months after, only by keeping them straitened in too narrow a compass; whereas, about the latter end of August, or beginning of September, he moved them into a larger loft, and the same Pigeons bred well, even then, and through the most part of the winter. The reason of this inconvenience is this: Salacious cocks will often be playing to and disturbing the others as they sit; and others who want room to sit will fight for nests, and by this means destroy both eggs and young ones.

To make your breeding places, you may erect shelves of about 14 inches broad, allowing 18 inches betwixt shelf and shelf, for otherwise your tall Pouters, by being forced to crouch for want of height, will get a habit of playing low, and spoil their carriage. In these shelves erect partitions at about the distance of 3 feet, fixing a blind by a board nailed against the front, on each side of every partition; by this means you will have two nests in the length of every 3 feet, and your Pigeons will sit dark and private. You may, if you please, fix a partition between each nest, to prevent the young ones from running to the hen when sitting at the other end, and cooling her eggs; for in breeding time, when the young ones are about three weeks old, the hen, if a good breeder, will lay again, and leave the cock to take care of and bring up the young ones.—(*American Fanciers' Journal*.)

## FACT VERSUS SPECULATION.

ALL praise to Mr. Pettigrew for his able leadership "on the paddle-box," when he keeps us straight in known ways, and does not run the vessel with its apian freight among rocks and sandbanks. All praise, too, to Mr. Lowe for the brave and able manner in which he seeks to save the good steamer from shipwreck when he sees the impulsive skipper in danger of the said rocks and sandbanks. I will confine myself to one matter, where Mr. Pettigrew reiterates as fact what certainly he has not demonstrated: I allude to his pertinacious assertion that bees do not gather honey in the flower, but a "crude"

substance not honey, which, after deposit in the cells by day, they re-swallow and convert into honey in their stomachs at night time or otherwise. I noted in a recent number of the Journal the same repetition of the statement that bees manufacture honey. It is a pure assumption—nothing more. No doubt bees re-swallow oftentimes the honey they have collected in the day, but what they re-swallow is honey, and not the sweet and merely crude ayurp which Mr. Pettigrew averts, and they re-swallow it for no other purpose than to transfer it from one cell to another. Such is constantly done to make way for the queen's convenience when she wants to lay, or to store and seal-up for winter use. Mr. Pettigrew's assertions to the contrary, if repeated a thousand times, will not disprove what all trustworthy apianians, so far as I know, have uniformly stated and believed. —B. & W.

IPSWICH POULTRY AND PIGEON SHOW will be held in conjunction with the Suffolk Great Agricultural Exhibition, and the East of England Horticultural Society's Summer Fête, at Ipswich, June 25th and 26th. Mr. E. Hewitt has consented to act as Judge. Spacious marquees will be erected. There are twenty-six classes for poultry, with first, second, and third money prizes, and various specials. Entries close on the 13th inst.

### OUR LETTER BOX.

BOOKS (*W. I. St. A.*).—Jacques's work is not to be had. We shall publish portions of it weekly.

CHICKEN'S EXCREMENTS GLUTINOUS (*H. C., Dover*).—The chicken is not in health. Give some castor oil, and feed on cooling food; give lettuce, grass, and slack ground feed. Lubricate the colon with castor oil, introduced by means of a feather. Cut off the feathers about and near the hinder part. Rub the whole of it with oil. Give a teaspoonful of castor oil internally.

FOWLS' NECKS BARE (*B. W. R.*).—We have very often answered a similar query, and have always begun by asking another—Are your fowls at liberty? We do not believe in a natural loss of feather, and when fowls shut up together become bare in spots, it is because they pick each other. We should not hesitate to put a naked-necked hen on eggs. Her feathers would grow during incubation. We have never known this loss of plumage when hens are at liberty, and although they submit to the operation, and stand quietly while it is going on, we do not believe they invite it. We do not believe in any interchange of attention, such as we see in horses and donkeys in fields or on commons, where one nibbles his friend just where he himself would be nibbled. The fowls want something they cannot get in confinement, and we suppose the feathers are the nearest substitute they can find. If you can turn them out, give them their liberty. If you cannot, and they are broody, put them on eggs. Rub the bare spots with spermaceti or with sulphur ointment. Their feathers will come again. At this time of year fowls of certain breeds, especially Spanish and Crève-Cœur, in confinement, eat their feathers, but we have not found Brahmas given to it. They only eat them at this time of year; after they have moulted they do not interfere with each other.

CROWLEY POULTRY SHOW.—Messrs. Newbitt have written to us criticising our reporter's notes, but we can only insert a part of their letter. They say the second prize Spanish at the above Show was not "overdone" in the "get-up;" adding that it is very annoying when at a show to be defeated by inferior birds, but it is doubly so when ill-reported of.

PIGMY POUTERS AND ISABELLA (*Alpha*).—This small variety of Pouters varies very much in colour. Some are like their larger brethren in shape, others are bare in the shank. The colours are red, or black, or blue, some fawn-coloured, some white. Isabella, we believe, are so called from their colour, which is light fawn with white bars. They are simply one variety of Pigmy Pouters. Breed these small birds as like the full-sized Pouter as possible; the nearer the resemblance in shape, &c., the greater their value.

PIGEON LAYING SOFT EGGS (*P. H.*).—Separate the birds for a fortnight; give the hen a dose of castor oil, no Indian corn, but peas. At the end of the fortnight put her back, and let her have some old broken mortar to peck at. Give a second dose of oil if needed.

ARTIFICIAL SWARMING (*H. Payne*).—The breakdown of the combs in your hive was a great misfortune. If the hive had had cross-sticks, very hard drumming would not have detached three centre combs. 1, If weather be warm neither stock nor swarm will need feeding. 2, If bees enough were left in the old hive it will recover. 3, No evil of importance will result from cutting through the brood if the cut parts are covered with bees. 4, No chilling could take place during the operation. 5, We cannot say whether the lifting of the hive will loosen more combs. A great deal depends on the condition of the combs, and whether they are fastened to cross-sticks. Let some one raise the hive perpendicularly, so that you can look up into the hive without shaking the combs. 6, The bees will not likely bring out the tape you used in trying to fasten the combs in, but are rather likely to seal it to the combs. 7, Your friend can rid his garden of coltsfoot by forking it all out, and if more come from seed treat it in the same way. No other treatment is so certain as this.

PREVENTING SWARMING (*C. T., Salisbury*).—We should not be surprised to hear that your bees have swarmed in spite of your arrangements before this can be in print; but your making them pass upwards through a Neighbour's hive into the open air may possibly answer your purpose. If so, no doubt the queen will ascend in due course and breed there. In this case you have only to follow the example of "B. & W." in the recent treatment of his supere, as detailed in these pages, by which he has made sundry artificial swarms with much success. Should your bees meanwhile swarm naturally, you have only to take off the Neighbour's hive and put them into it. We do not quite make out your after-intentions, supposing they should not swarm.

NADIRING (*A. H. J.*).—In nadiring hives with a view to separate them, and thus swarm them artificially, the queens are not sought for. If they happen to be in the nadirs at the time of separation we may consider ourselves fortunate; for it is well the queens go with the nadirs or hives partially filled. If the queens are left in the old stocks, the bees of the nadirs will make queens

for themselves, and generally a great quantity of drone combs; hence the desirability of having the old queens in the hives that are being filled with combs. In your case the hives should be cut asunder, and placed on separate stands and stands, leaving it to chance where the queen goes. In all cases of nadiring the bottom door only should be open.

TREATMENT OF DEER STOCK (*Notice*).—You say your straw hive is very well in bees. If so, you can now hardly expect a swarm from it that will do you any good, as it is getting advanced in the season. You might better buy a swarm, and so furnish your wooden hive with tenants, and the sooner the better. See that it be a large swarm. But if you prefer it, you can do what you propose—namely, put your wooden box under the hive. In this case do not remove the hive to another stand. You must stop up all openings in the straw hive, and let the bees go in and out of the lower hive. If your bees multiply sufficiently, and the season is a good one for honey, they will build combs in the hive below, and you can then decide what to do ultimately; whether to plunder the upper or the lower hive, and make the one or the other the future home of the bees. Should they prefer to swarm, you can put them in the wooden box and separate the hives.

RABBIT SCURF (*C. H.*).—The best treatment you can adopt is to use sweet oil in the ears. You can put it in with a feather or a camel's-hair brush. Where the scurf appears rub the fur and skin with cocoa-nut oil. Use a piece of sponge for the purpose, and it is better. Your flesh should not come in contact with it, lest the skin should be broken anywhere. Give some old carrots, or green food thoroughly dry, that has been for some hours exposed to the air.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.						Rain.
1874.	Barom- eter at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
June.		Dry.	Wet.			Max.	Min.	In sod.	On grass		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
We. 8	30.158	63.2	58.4	W.	60.7	71.8	63.5	127.4	62.6	—	
Th. 4	30.499	65.9	57.3	S.	60.7	78.8	48.8	120.7	46.0	—	
Fri. 6	30.381	69.0	57.5	W.	61.4	80.5	49.4	123.2	45.1	—	
Sat. 6	30.098	69.4	62.1	N.	63.3	77.7	57.3	123.9	58.5	0.236.	
Sun. 7	30.000	59.4	55.5	E.	61.9	71.5	63.2	123.8	58.2	—	
Mo. 8	30.274	63.4	54.4	S.E.	62.2	75.1	45.2	123.7	42.4	—	
Tu. 9	30.163	70.0	57.4	N.	60.9	80.0	47.2	122.8	44.4	—	
Means	30.242	65.8	57.5		61.5	76.5	52.7	123.6	48.2	0.236	

### REMARKS.

3rd.—Much cooler day; dull and overcast.  
4th.—Hot, fine, sunshiny day.  
5th.—Very warm bright day; cloudy evening.  
6th.—Fine morning; overcast and dark afternoon; heavy rain commenced at 7.10 P.M.  
7th.—Beautiful day, much cooler.  
8th.—Slightly overcast at times, but fine day.  
9th.—Very fine, and rather hot.

Temperature about the same as last week. Barometer rather high. Air remarkably dry, as will be seen from the following figures, which show the humidity of the air at 9 A.M. each day; an atmosphere saturated with vapour being represented by 100, and an absolutely dry one by 0. June 3rd, 73; 4th, 56; 5th, 48; 6th, 62; 7th, 77; 8th, 56; 9th, 45. From this it will be seen that on the 5th and 9th the air contained less than half the amount of moisture which it is capable of containing.—G. J. SYMONS.

### COVENT GARDEN MARKET.—JUNE 10.

MARKETS continue well supplied, and a steady trade is going on. Hothouse fruit is good, and quite sufficient for the demand. Foreign importations heavy.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples..... sieve	2	0 to 3	Mulberries.....	½ lb.	0 to 0 0
Apricots..... doz.	2	0 4	Nectarines.....	doz.	8 0 18
Cherries..... box	2	6 0	Oranges.....	½ 100	4 0 16
Chestnuts..... bushel	0	0 0	Peaches.....	doz.	12 0 30
Currants..... sieve	0	0 0	Pears, kitchen.....	doz.	2 0 6
Black..... do.	0	0 0	dessert.....	doz.	0 0 0
Figs..... doz.	8	0 15	Pine Apples.....	lb.	5 0 10
Filberts..... lb.	1	0 1 6	Plums..... sieve	0	0 0
Cobs..... lb.	1	0 1 6	Quinces.....	doz.	0 0 0
Gooseberries..... quart	0	6 0 9	Raspberries.....	lb.	0 0 0
Grapes, hothouse..... lb.	2	0 8	Strawberries.....	½ lb.	4 0 10
Lemons..... ½ 100	8	0 12	Walnuts..... bushel	10	0 16
Melons..... each	4	0 8	ditte.....	½ 100	2 0 2

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes..... doz.	3	0 to 6	Lettuce..... doz.	1	0 to 2
Asparagus..... ½ 100	8	0 6	Mushrooms..... pottle	1	0 2
French..... 3	0 10	0	Mustard & Cress, punnet	0	2 0 6
Beans, Kidney..... ½ 10	2	0 0	Onions..... bushel	4	0 7
Broad..... bushel	12	0 0	Pickling..... quart	0	6 0
Beet, Red..... doz	1	0 5	Parsley per doz. bunches	2	0 4
Broccoli..... bundle	0	1 6	Parsnips..... doz.	0	9 1
Cabbages..... doz	1	0 1 6	Peas..... quart	1	0 3
Capicums..... ½ 100	0	0 0	Potatoes..... bushel	3	6 0
Carrots..... bunch	0	6 1	Kidney..... do.	0	0 0
Cardiflower..... doz.	4	0 10	New..... ½ lb.	0	0 9
Celery..... bundle	1	6 2	Radishes..... doz. bunches	1	0 1
Coleworts..... doz. bunches	2	6 4	Rhubarb..... bundle	0	9 1
Cucumbers..... each	0	6 1	Salsafy..... bundle	1	6 0
Endive..... doz.	0	0 0	Scorzonera..... bundle	1	0 0
Fennel..... bunch	0	3 0	Sea-kale..... basket	0	0 0
Garlic..... lb.	0	6 0	Shallots..... lb.	0	3 0
Herbs..... bunch	0	3 0	Spinach..... bushel	2	0 8
Horseradish..... bundle	3	0 4	Tomatoes..... doz.	3	0 6
Leeks..... bunch	0	3 0	Turnips..... bunch	0	3 4
			Vegetable Marrow.....	0	0 0

## WEEKLY CALENDAR.

Day of Month.	Day of Week.	JUNE 18—24, 1874.	Average Temperature near London.			Rain in 43 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m. h.	m. h.	m. h.	m. h.			
18	Tu	Meeting of Royal and Linnean Societies.	72.3	50.4	61.3	21	44 at 8	17 at 8	52 7	41 11	4	0 45	169
19	F		70.8	48.6	59.7	22	41 3	17 8	8 9	56 11	5	0 58	170
20	S	Crystal Palace Rose Show.	72.3	50.5	62.4	18	44 3	18 8	21 10	morn.	6	1 11	171
21	SUN	3 SUNDAY AFTER TRINITY. Longest Day.	74.4	48.8	61.2	17	41 3	18 8	52 11	8 0	7	1 24	172
22	M		73.6	47.1	59.9	17	45 3	18 8	after.	18 0	8	1 37	173
23	Tu		72.7	48.9	61.5	15	45 3	19 8	50 1	29 0	9	1 50	174
24	W	MIDSUMMER DAY. Royal Botanic Society's [ Show.	74.1	49.1	61.1	20	45 3	19 8	1 3	39 0	10	2 3	175

From observations taken near London during forty-three years, the average day temperature of the week is 72.9°; and its night temperature 49.0°. The greatest heat was 93°, on the 19th, 1816; and the lowest cold 30°, on the 20th, 1855. The greatest fall of rain was 0.72 inch.

## HEATING.



THE articles which have lately appeared on this subject have been particularly interesting. We have had the science and practice of the matter by contributors competent to deal with the subject; but the very divergence of the views put forth only proves that a standard of perfection is not yet reached. Heating is a vital point in gardening, and every line treating on the subject is sure to be read carefully. Messrs. Abbey and Kinnear have given exhaustive treatises of much value, "A RAMBLING C.E." a lucid and readable theoretical essay, and the veteran Mr. Robson some hard-headed practice. I feel it somewhat presumptuous to enter the lists of "heaters," and I approach the field with great diffidence, and would not approach it at all if the matter had not been left in a state calculated to perplex many whose sole guidance is the columns of this Journal, who want to heat but cannot decide by the "differences of doctors" that bewilder. First, the mind is made up to have a saddle boiler, and anon confidence is shaken, and the tubular idea is paramount, but only in turn to be put aside, waiting for something on which all are agreed is "the best."

From time to time it has fallen to my lot to work saddle and tubular, conical and spiral boilers, and all successfully, and I have come to the conclusion that there really is not so much difference between the merits of one boiler and another as sometimes appears on paper. A great deal more depends on the setting and management than can easily be shown in writing. The goal to be attained is to extract heat from fuel, and diffuse it in a given structure with a minimum of waste, guarding against—as Mr. R. Fish used to quaintly put it—heating the external atmosphere. As much heat is frequently wasted in the stokehole and by the chimney top as would warm another house of the size of that the boiler is heating, and this with all boilers, unless special care is taken in setting and economising the elements of combustion. The limekiln system of heating appears on the face of it to be the most economical of all modes, as heat is not only extracted from coal, but by it from stone also. I carefully examined the apparatus at Manchester, where it certainly worked admirably, and for extensive establishments I must confess to being favourably impressed with the system. For small and medium-sized places, however, I have an idea that the plan cannot be so advantageous; the body of fire required to reduce the stone involving more coal than is demanded by the old system. Some experience of the adaptability of this mode to places of limited extent seems to be required.

In point of economy I well know which mode of heating carries the palm when applied to small isolated structures, and that is the Arnott stove. It is so simply because all, or within a modicum of all, the heat of the fuel is diffused in the house, very little indeed finding its way out of the chimney. This is clear from the

fact that the stove may be kept hot while the smoke pipe above it is comparatively cool. These stoves, however, will not become general, as the notions that they produce dirt and dust and a parching heat from their surfaces are not easily dissipated. The simple fact is they can be worked and made to do their duty in a perfectly satisfactory manner if the attendant takes an interest in them, and will do them justice; but this or any other mode of heating will never succeed if any prejudice exists against it in the minds of stokers or managers. That may be set down as a fact. It is much more easy to drive out cold than prejudice. I once expressed an opinion to a visitor that if a boiler and piping were connected with the "Arnott," it would be difficult to beat it as an effectual and economical heating medium. His reply was, "Ah, just the same as Mr. Rivers has." That is the first and last word I heard as to this combination being really in practice, but if it is the fact we may take it for granted that it is of value, as a horticulturist of Mr. Rivers's fame and experience would never be content with anything of a doubtful nature. Does this combination exist, and with what result?

As to the relative value of saddle and tubular boilers there is no real difference to quarrel about when both have fair play. Despite "A RAMBLING C.E.'s" terms, divisional and non-divisional, gardeners will prefer the old designations as more truly descriptive and distinctive. We think of tubulars as a series of tubes united into a skeleton form, and fed with fuel from the highest point; of saddles as a body fed from the lowest point. Yet some of the latter are as truly divisional as are the former. Ormson's, Jones's, Green's, and Cannell's are to all intents and purposes divisional, yet they are accepted as saddles; and I have a strong opinion that as in general things the truth is a mean between two extremes, so in these boilers the future will recognise an apparatus fulfilling their requirements as efficient heat-diffusers with not over-dainty appetites, and over which "C.E." and Mr. Robson may well shake hands without any qualms of conscience. In fact, the most purely divisional boilers of the day are one a tubular and the other a saddle—viz., Dennis's and Cannell's, the separate parts of each being as portable as bricks, and as easily piled into a complete structure.

Tubular and saddle boilers, as such, are frequently unjustly or hastily condemned, and if one of either kind fails in its duty it is too much the fashion to rail against the whole type. The only fair way is to judge each individually, and in accordance with its own surroundings. Some time ago I was extremely uneasy at the working of a saddle boiler. It was a regular glutton of fuel. It was my duty to lay the matter before the owner of coal and boiler, with a tabulated account of consumption. Of course I might have denounced all saddle boilers, and clamoured for a tubular. The boiler was examined; it was sound, but of the rudest description, and was set in such a manner that only about one-eighth, really less, of its surface was exposed to the fire, the main volume of heat gliding past it and shooting up the chimney.

Clearly that boiler had not a fair trial. It was reset. The fire was made to float over every possible part, and at the same time confined as much as possible to the body of water. The feed pipe was put into the bottom of the boiler, and it was again set going. The effect was magical. So decided was the improvement that another house was attached for growing Melons, and the boiler now heats three houses with fully one-third less fuel than when it heated two; so that the owner has a Melon house heated for nothing, and is money in pocket by the improved setting of the same old boiler. I do not mean to say this boiler is perfect, well knowing that a divisional saddle or a good tubular would effect a still further saving of fuel, but it satisfies, and is cited as an example of the advantage of careful over careless setting.

I will now cite a case in reference to a tubular boiler, tending to disprove the soundness of the practice of condemning all because one does not work well. A nobleman in the county of Berks has recently put up a range of houses, and as it fell to my lot to be instrumental in supplying him with a gardener, I felt some interest in the place. The heating was entrusted to and completed by the builders, but is not satisfactory to the gardener on account of the heavy fuel bills he is compelled to incur. The boiler is tubular, and the amount of coke and the time taken to get heat up is certainly unreasonable; and whether an employer may be satisfied or not, it is not likely that any good gardener would, as no one likes to see any useless expenditure in the department for which he is responsible. I have lately had an opportunity of seeing this boiler, and was met at the outset with "No more tubulars for me." An examination told me at a glance—at least, I believe it did—where the fault lay. It is by a maker whose name is by no means obscure, but it is only fair to say is not Weeks or Dennis. My first question was, "Can you get the water to boil in the boiler?" "Yes, easily enough, but cannot get the pipes hot under two or three hours," was the reply. It was not likely that he could, the return pipe entering the boiler at the top immediately under and close to the flow. Now had the return pipe entered the boiler at the bottom, and the feed pipe also, instead of at the top, he would have had no difficulty with the circulation, which is now so sluggish and bad, and instead of "no more tubulars for me," his verdict would probably have been, "nothing but tubulars." A year ago I met a precisely similar case in a sort of rough-and-ready home-made saddle boiler. There was no satisfactory circulation. The flow and return pipes entered the boiler close together. The pipes were taken out, and that side of the boiler plated over; it was then pierced at top and bottom for flow and return, the feed being made to enter the latter pipe close to the boiler, and the whole apparatus has since worked in the most smooth and satisfactory manner, not a hitch or difficulty of any kind occurring. So it is, possibly, in numerous cases; it is not that the tubular or saddle type is wrong as a system, but that some error in construction, or inferior setting in particular cases, is the real root of the grievance, and the cause of an unjust and sweeping condemnation of whatever class of boiler is locally at fault.

But there are boilers which set themselves as it were, and are free from the cardinal errors above named, and these both on the saddle and tubular systems. The question, then, is not so much which affords most heat, as which wastes most by heating the air outside instead of the house inside. That is the real error to avoid. That is more than anything else the crucial point in boiler-testing. It is not, of course, of such great moment in gigantic establishments as in the far greater number of limited extent. In many detached structures fully as much heat is lost as utilised—that is, one half is wasted to supply the other. One of the snuggest modes I have seen of heating a little house was by a conical boiler fed at the side near the top by a conducting tunnel from the outside, the boiler being inside, and forming the basis of a hot-bed for propagating. A boiler like that gets the vertical heat of the fire, and is powerful. A spiral boiler—a simple coiled pipe, corkscrew fashion, is a first-rate generator of heat, well adapted for little places, and possibly great ones too, but of the latter I cannot speak practically. There is, I believe, a boiler on this principle now in repute, but of it I have no experience, having only "read about it."

I am treating this matter without prejudice, simply giving a detail of experience and observation; but some may say, "After all, which would you choose, to which plan would you give a favourable verdict, tubular or saddle?" This resolves itself into the question of the scientific "RAMBLING C.E." or

the practical Mr. Robson. Well, I would take a slice off both, and should look out for a divisional saddle that would heat quickly, that would conserve the fire around itself, and transmit the maximum amount of the heat generated where it was wanted—indoors, and not waste it outdoors. I would choose this mainly because it would burn anything burnable. Tubulars have done, are doing, and will do their work splendidly, providing proper food is always at hand. They are more dainty than the saddles. They are the thoroughbred racers of heating, the saddles being the cart horses. But between these two are useful hybrids, swift, powerful, and hardy, that will "eat anything." I have often felt the inconvenience of being without coke, and found coal an indifferent substitute for working a first-rate tubular. I have seen damage result from the same cause; of course, no fault of the boiler, which had only got into a wrong locality where coke ran short, and was far to fetch. In such a place of famine to the tubular the saddle would have lived and luxuriated. It is on safety and certainty, therefore, that I prefer the saddle type, and would seek celerity and economy by having it divisional.

I hope none will find fault with me for so deciding and giving the honest reasons guiding to the verdict, at any rate without advancing more powerful reasons, and as free from bias and prejudice as those which prompted the little gossip here penned. I should like to give some experience as to tacking on to the water-heating a flue, for I do not despise a flue, but my paper has run to such an inordinate length that it must be postponed.—W.

### SOMETHING LIKE A "CLOTH OF GOLD."

A CORRESPONDENT in a late number of the Journal has alluded to the beauty of this yellow Rose, and I have myself spoken of the "baby" one which is on the wall of my vicarage. It is a very fine baby, only three years old, and has now run up some 16 or 18 feet, and has had on it this season between fifty and sixty flowers. Some are yet to open, but many of those I have cut have been grand indeed. I have always maintained that it is the finest of all yellow Roses. Its grandly robust footstalk which holds the flower erect gives it a superiority to *Maréchal Niel*, which the latter's deeper colour and finer blooming qualities do not to my mind compensate for. There are several *Maréchals* on the walls of cottages in this and the neighbouring parish, but looking at the trees from a little distance you are led to imagine that they are covered with decaying flowers. It droops its head so much, and displays the outer petals, which decay before even the flower commences to open. Well, my baby is one of which I am very proud; but there is a plant of it on a house in my parish which puts it so completely in the shade that I cannot forbear giving you some account of it.

"The Ashes" is the name of a very pretty villa close to the common of Hothfield, but in the parish of Westwell, inhabited by two elderly ladies, one of whom especially has delighted in making the place and filling the garden and shrubberies with the choicest flowers and shrubs. The Misses Whittle were friends of our departed friend the Rev. Joshua Dix, and by his kindness many choice things found their way here. The place is quite a little gem, and the Roses are especially its glory. The soil is naturally too light for them, and but for our staunch friend the Manetti they would not have succeeded so well. Against the front of the house facing westerly is the plant of Cloth of Gold to which I allude, covering completely one-half of the house. It has two large main stems, and is either on its own roots or budded very low—I measured the other day one of these stems, it was nearly 10 inches in circumference—and the foliage is very grand. It has almost grown too large for the place, and last year it was very much cut back and cut out, and as a consequence there are not so many blooms on it as I have sometimes seen, when hundreds of flowers were in all stages on it. This year there are nearly a hundred, and from the character of the year I am sure it would have equalled any of its former feats in blooming. It does not seem that Cloth of Gold is particular as to aspect. Mine is planted on a south wall, and it has grown also on the east side, in both aspects blooming abundantly, while, as I have said, that at The Ashes is on a westerly one. There has been nothing that I know of particular in the treatment of it; certainly not in my case. The stock has pushed its roots under the walk, and has had no "turtle soup" to feed on. May it not be, then, that if persons who complain that they cannot get it to flower were to leave it alone and not touch

it with the knife, it might do as well as Miss Whittle's or my own smaller one?

As I am writing on the subject of yellow climbing Roses, I would again say a word on behalf of *Rêve d'Or*, which for covering a wall with beauty of foliage and flower is, I think, unequalled. At the present moment there is one on the east wall of my house which is a perfect picture. It was planted there three years ago. It is now 22 feet high, covered with dense foliage from the ground, and full of bloom. I counted on one branch a yard long sixteen blooms. In richness of colour it far exceeds *Solfaterre*, and is equally free in blooming. In speaking of it in laudatory terms to Mr. George Paul he quite agreed with me, and called it, not inaptly, a climbing *Madame Falcot*. I would recommend anyone who wishes to have a wall rapidly and well covered with a very beautiful Rose to plant it.—D., *Deal*.

#### NOTES ON FROST AND ITS EFFECTS.

LIKE many other terms in everyday use, there seems to be more than one meaning attached to the word frost. The scientific man, putting his thermometer outside on his window-ledge, notes the figure to which the mercury has descended during the preceding night, and if it has gone as low as or lower than 32° he books it accordingly, regardless of what other tokens there may be in a more natural way, as the stiffening of wet cloths, or of herbage of any kind, as well as now and then congealing water. The philosopher pays little heed to these; his instruments are his guides, and by them his idea of heat and cold is regulated. On the other hand, the country labourer looking out on a summer morning and seeing a very heavy dew shining white, almost glistening with the rising sun, and feeling the air more chilly than it was at mid-day the day before, pronounces it a frost, without waiting to see whether anything has been stiffened by it; and his observation, like that of the man of science, is hardly borne out by the facts of the matter. Frost, to deserve the name, should be sufficiently intense to stiffen or solidify objects moistened by water or other liquids of a like kind, or it may be inert substances charged with water or other liquids not of a nature difficult to congeal. There are circumstances under which frost shows itself more conspicuously than in others. Generally speaking, inert non-conducting substances, as wet straw, litter, leaves, cloths, matting, boarding, and the like, show signs of frost when none is to be seen on the naked ground, and still less on water. Winds may either modify or intensify the cold, and it is hardly necessary to say that elevation has also a great effect. All these considerations, acting together or in part, may be taken as so many fixed laws bearing on the subject; but then there are exceptions, or it may be exemptions, of a kind more difficult to explain, in which frost exhibits a sort of capriciousness in attacking certain things and certain places, while others that appear to be equally exposed escape. Every season presents such freaks, and the reasons given to account for them are often as capricious as the attack. The young shoots of a coppice may be all cut by frost in a certain line running through a wood of several acres, while right and left of that line no damage may be done, or the line may have escaped while the rest is cut. The notion has been that a current of air blowing through in the direction indicated may either have saved them or been the cause of the damage, just as the wind was cold or otherwise; but this is not always a just conclusion, for I have known a frosted belt, of say 50 yards wide, running through a wood at a time when the wind was at right angles to it; and, moreover, we sometimes see the lower twigs of the shoots damaged by frost, and the top ones escape, even in coppices not 10 feet high. I will now pass on to notify the effects of frosts on the more important horticultural objects we are interested in.

Taken as a whole, May, 1874, has presented us with a greater number of frosty days than any previous May during the last twenty years. Frosts quite as sharp and quite as late have occurred before, but I have no record during the above time of as many as eight decidedly frosty mornings, and five more that nearly approached being so, or which showed frost at some part a very short distance from the place of observation. The past month must therefore be looked upon as being an extraordinary one in that respect. Well, what has been the result? To this inquiry very conflicting answers will be given, and I expect frost will be charged with the loss of many thousands of bushels of fruit of all kinds, as well as damage to Peas, Potatoes, and other vegetables, and I do not know

how much injury to the grass crop and check to the growth of trees, shrubs, &c. I am not going to assert that frost does no harm, it would be simply absurd to do so; but I sometimes think that other causes have been at work as well. The remark of a very old friend of mine, one who has been in the habit of sending many thousands of bushels of fruit to market every year for nearly half a century, has more weight in it than some would suppose. He says he "does not care very much for a frost, but he is afraid of a fever." In other words, he does not think the frost does so much harm if it is not quickly followed by a bright sun; and what I have noticed of the effects of frost the past season justifies the opinion of my venerable friend, whose years of observation (not mechanical but natural) entitle him to respect. Certainly there were one or two of the sharpest frosts we had the past May which confirms the belief that the "fever," or the bright sun, is the evil most to be dreaded. One of the cases was as follows:—

The evening of May 9th, showing every appearance of frost, I placed a basin of water out of doors on a grass plat near my cottage, and in the morning, about 5 A.M., the water was so hard frozen as to allow the basin to be turned upside down without any coming out, in fact the ice was thicker than the oldest-fashioned pennies. Now, on a south border, at a distance of less than 200 yards, were some Potatoes growing, also some Dwarf Kidney Beans that had just made their appearance above ground, and the occurrence of a frost so severe in the immediate neighbourhood of these crops would have led to the expectation that both would be injured if not destroyed; yet such was not the case, for neither of them appeared injured, although the Kidney Beans certainly looked yellow, and can hardly be expected to be much of a crop, yet I attribute that to the prolonged cold weather rather than to this particular frost; but what saved them and the Potatoes from the "fever" alluded to was some high trees to the east, which checked the action of the sun until the frost had gradually disappeared. The Potatoes look as well as need be; but the Kidney Beans, from the long period of cold weather we had, were starved, and will not be worth much; but it is certain the frost did not kill them, although I find it is blamed for injuring crops of a more hardy kind. Peas in an advanced state have been seriously damaged, and more than one field near here so badly cut that it was contemplated to plough them up, and that about the time they were coming into flower, but some delay taking place they have recovered wonderfully. Clover has also been injured, but not more than has been the case in former years; but I do not hear of anyone remembering the Peas suffering so much before. Potatoes, of course, have suffered in places, but here, as in the case of the young growth of the coppice plantation, the attacks have been capricious, and difficult to account for, elevation and open exposure not always affording a reason for the attack. I am not sure, after all, that the damage from frost is greater than in average years. In general the ground was dry, and although one or two mornings were bright and promising, all the frosty mornings were not so, and if I ventured an opinion as to the relative injuries inflicted by the frost and that caused by the prolonged cold weather, I should be inclined to blame the latter the most.

Into the effect of the frost on the fruit crop I do not intend at present to enter, as the accounts are so conflicting that it is difficult to make any approach to a just opinion. As regards other crops I attribute the evil as much to the cold dull weather as to the frosts. A glance at the character of the season reveals a somewhat singular state of things. The weather in the early part of April was not remarkable, but during the latter half of the month was very fine, warm, and dry, hurrying on vegetation and forcing out the fruit blossom with more rapidity than was consistent with the due setting of the fruit; but a change took place on the last day of the month, when cold weather set in, which with frequent frosts continued up to the 21st of May, after which fine weather again set in, the transition being rapid rather than gradual; and the last ten days in May and the first week in June have been as remarkable for their warmth as the preceding period was for cold.

One especial feature in the weather this year must be noticed; it has been an unusually dry winter and spring, for I find the rainfall of the six months, from December 1st, 1873, to May 31st of the present year, has been slightly under 7 inches, which is less than in any other similar period during the last twenty years, excepting that ending May, 1858, while in many seasons there falls double that quantity. One good effect of the absence of rain is the condition the ground is in; in most places the stiff adhesive clay lands work mellow and pleasantly,

and are, consequently, suitable for the roots of plants to run in. I should think, too, there never was a better season for the bedding-out gardener than the present, for the cold ungenial weather up to May 22nd did away with all idea there might be of beginning before that time; and it must be confessed when there is much to do the temptation to begin earlier is very great; but this season it could not be done, and as warm fine weather set in so soon after the time mentioned, and the ground was in good order (I allude to soils which are usually stiff) the after-progress may be expected to be good, and may possibly be as early as usual. But, as this may be adverted to hereafter, I need not allude to it further here than to say that notwithstanding the general character of the winter for mildness, *Calceolarias* and *Gazanias* that had withstood the previous two winters out of doors succumbed in the past one in February.—J. ROBSON.

## STOCKS FOR SPRING AND EARLY SUMMER.

No. 2.

ANOTHER strain of Stocks, in being more dwarf than the *Lothians*, are most useful for particular purposes of decoration in the late spring months, and this is the class known as *Intermediates*. They have the same decided colours, but do not possess the lasting qualities of the *Lothians*. They are grown in immense quantities in the vicinity of large towns for window-garden decoration amongst the urban population. For this purpose they are now possibly pouring into Covent Garden by thousands. They are great favourites, and deservedly so, and when fairly well grown cannot fail to attract. Sown early in July, potted early and firmly, grown-on sturdy, and wintered in pits near the glass, they turn out in good condition for spring work.

Ordinary Ten-week Stocks sown at the end of July, and treated similarly to the *Intermediates*, flower finely in spring; but the only advantage, if it is an advantage, they give is in variety of colour. I cannot imagine why the growers of seed will persist in splitting up colours into such an interminable number of shades, unless it is to humiliate English lexicographers, it being simply impossible in our vulgar tongue, elastic as it is, to find anything like a corresponding descriptive nomenclature to faithfully represent them. The dirty, dingy, miserable mixtures in colour bring Stocks into disrepute. Perhaps these remarks may reach some of the continental Stock-seed growers, and I would respectfully inform them that, if English growers tolerate the mongrels, they do not admire them. True, they buy them because they can hardly help it, but not without grumbling. Perhaps the best cure is to grow seed at home. It would pay well, and, with good culture and management, would be as good as the foreign supply.

A word as to saving seed of any choice variety. The old notion of growing by the side of doubles is an empty one. The right plan is to give high cultivation and ripen in a sunny aspect with a high temperature, taking off the upper weak portion of the spike, leaving only the fine pods to ripen. If to this culture be added the special care of selecting only those flowers with more than the normal number of petals, as fives, sixes, sevens, &c., then we are on the direct highway to a double progeny. I never but once was disappointed by this plan of selection. I sired from marked blooms of a particularly good kind a small quantity of seed. Half of it was sown, and every flower came double; the following year the other portion was sown with the same result. It was not disappointment from lack of doubles, but by losing the variety. It was literally a "double disappointment."

I should add that in potting Stocks, have a care that the pots are clean-washed. A dirty pot should never be used for anything; but I know in many places, owing to the press of work, it is simply impossible to wash every pot before using it. It is easy to put a Stock into a dirty pot, but next to impossible to turn it out without tearing away all the best roots. Hardly anything clings to the sides of a dirty pot like the small fibres of the Stock, and there is a danger of all previous labour being thrown away by neglecting to attend to this one simple yet all-important point in management.

But, pots or no pots, Stocks, *Bromptons* and *Lothians*, should be had. They are amongst the things laying claim to the title of everybody's flowers, and should be seen in some part of every garden. That title is an honourable one. Let the few have all the enjoyment they can wish for, but he who adds to the wholesome pleasure of the many does a work of

which he need never be ashamed. If a flourishing nobility is a nation's stay, may it ever flourish; the happiness and content of humbler homes is a nation's strength.—J. WRIGHT.

## ROYAL HORTICULTURAL SOCIETY.

JUNE 17TH.

FRUIT COMMITTEE.—A. Smee, Esq., F.R.S., in the chair. Messrs. Carter & Co., of High Holborn, sent examples of Maclean's Little Gem, and Carter's Extra Early Premium Gem; as exhibited, the last named is longer podded and more prolific than the other. Mr. Bennett, The Gardens, Hatfield, sent examples of Bloxholm Hall Scarlet-flesh Melon; the same variety was sent by Mr. J. Douglas, Loxford Hall, Ilford. That from Mr. Douglas was the better flavoured, but neither was worthy of a certificate. A white-fleshed variety, Lady Isabel Cecil, was sent by Mr. Gilbert, The Gardens, Burghley, Stamford; it was of fair flavour, but inferior to other white-fleshed sorts.

Strawberry Brown's Wonder was sent by Messrs. Lee, of Hammersmith, to show its wonderfully prolific character; the plant was taken from the open ground, and was loaded with fruit. The Committee asked to see it when ripe.

A seedling Black Grape with round berries, named Russian Emperor, was sent by Mr. Gilbert. It in some respects resembles *Espiran*, but is much inferior to many other Grapes at present in cultivation.

FLORAL COMMITTEE.—Mr. J. Fraser in the chair. The plants submitted to the Committee on this occasion were very few, nearly all novelties that were in flower having been brought forward at the recent shows. Messrs. Veitch, of Chelsea, sent Imperial Dwarf Carnation with self scarlet flowers, and of exceedingly dwarf habit, and on that account very desirable. This is a class of plants which, from the great demand for the flowers in the market and the prices which they command, is evidently in great favour, and, indeed, they are valuable decorative plants at this season, and fragrant as well. The great fault of most of them is their spindling habit, requiring the use of sticks; the great merit of this variety, that sticks would not be required, or only very short ones, if planted in a bed. A first-class certificate was awarded. From the same firm came *Lilium purpureum*, white dotted with dark crimson. Mr. C. Lidgard, of Hammersmith, had a first-class certificate for *Lobelia* Duchess of Edinburgh, of very compact habit, producing a profusion of white flowers. A first-class certificate was also awarded to Mr. Chitty, of Stamford Hill, for *Coleus* Duchess of Edinburgh, with leaves coloured with various shades of magenta purple and dark crimson, with green or cream-coloured edges. A first-class certificate was awarded. Mr. R. Dean, Ealing, had a commendation for his strain of seedling *Pentstemon*, and he likewise exhibited a collection of *ant Antirrhinum*s.

Mr. Bull, of Chelsea, sent *Pescatorea albo-sanguinea*, white, with a rose-tinted lip, dark crimson at the base; Mr. R. P. Barr a collection of Lilies, in competition for Messrs. Barr & Sugden's prizes, including several varieties of *L. auricum*, *bulbiferum*, *Thunbergianum*, and *Martagon*. The Rev. G. Kemp, Sion College, also sent varieties of *L. Thunbergianum*; and G. F. Wilson, Esq., Heatherbank, Weybridge, an unnamed species with yellow flowers.

From Messrs. Cripps & Son, of Tunbridge Wells, came *Clematis Delicata*, semi-double, pale lilac, and *Attraction*, a loose flower not equal to others; Messrs. Downie & Co.'s Silver Tricolor Mrs. Downie, very pretty and high-coloured. Mr. Pestridge, Boston Park Nursery, Brentford, contributed a collection of Bronze and Tricolor *Pelargoniums* in fine condition. Mr. C. Noble, nurseryman, Bagshot, sent a group of *Spiraea palmata*, whose pretty crimson feathers are always attractive, though in this case not so much so as usual. From Mr. C. Lee, Clevedon, came a rosy crimson sport of *Reine Blanche* Rose; and from Mrs. Williams, 38, Hazlewood Crescent, Upper Westbourne Park, a nice basket of artificial Roses, scented with rose water, and relieved with neatly-executed Ferns.

## A SIMPLE WAY OF GROWING SPECIMEN FUCHSIAS.

YOUR readers are doubtless familiar with the habit which the old *Riccartoni* Fuchsia assumes when grown out of doors in those situations where, through the severity of the winters, it is compelled to assume a semi-herbaceous habit, dying down in winter, and springing up again in summer from an annually increasing stool until it attains the size of a goodly bush. I have often thought what magnificent specimens such plants would make, if transferred to a pot, with their profusion of flowers; but how much more imposing would some of our fine cultivated varieties appear grown in the same way! Imagine

a plant of a good variety growing in a 12-inch pot, and furnished, perhaps, with a hundred or more unpinned shoots 2 or 3 feet in length, and loaded with bloom—a circular ball, in fact, but graceful, and perfectly free from anything like that trained formality which we too often see at exhibitions. A group of such massive specimens on an exhibition table would make the attenuated pyramids which we have hitherto been accustomed to admire, to appear more attenuated still, and in a less favourable light. Not so long ago I saw a number of specimens of the kind I have described: they had not been grown for exhibition, but had simply been allowed to assume the bush habit, because the gardener had no time to attend to pinching and training; but he had succeeded nevertheless in producing a lot of plants for vase, &c., work in the house such as one seldom sees.

The advantages of this, which may be called the natural system, are that the plants can be grown with less than one-tenth of the labour usually bestowed upon specimens so-called, flower better, and are better suited, as a rule, for decorative purposes.

It is not difficult to get up a stock of such plants. Those who have Fuchsias one year old or more, have only to cut them down to the pot, and they will break away from the bottom the first year, perhaps only six, eight, or twelve shoots, according to the age of the stool; but in such a case the number may be increased by pinching the shoots when they are about 2 inches in height. This will multiply them considerably; but no further stopping must be done. Plants may be cut down at any time while they have still growing vigour in them. At the end of the season the plants must be cut down again, and stored away till spring, when they should be partially shaken out, and potted at once in the pots that are to last them for the season, as, when grown in this way, any interruption of growth through "shifting on" is not desirable. The size of pot will, of course, depend upon the size of plant that is wished: the size of the specimen will just be in proportion to the root-room, and the room and light which they receive. Neat little plants in 4 and 5-inch pots may be had, or they may be grown 6 feet in diameter, and of proportionate height, according to fancy or requirement. I need scarcely add that good rich soil and liberal waterings should be given to promote a vigorous growth and long-continued bloom.—J. S. (in *The Gardener*).

#### NOVELTIES IN THE ROYAL GARDENS, KEW.

DECAELONE ELEGANS, *Dene*, a new and very rare plant of unusual interest, is in flower in the Succulent house. It has the habit and general appearance of a *Stapelia*, to which it is allied. The stems are numerous, seven to nine-angled, of which the small tapering elevations close together bear three branched spines. The lateral branches are at right angles with the central, like the top of a cross. The flower is borne at the base of a young shoot, and would be pendulous but for the pot on which it rests. The corolla is funnel-shaped, with five triangular acute teeth curving outwards. It measures about 2 inches in length, and  $1\frac{1}{2}$  inch across the mouth, extreme breadth. The interior is covered with papillæ, minute at the mouth, increasing in size and number towards the base. The corona is remarkable; it consists of five parts, each cleft nearly to the base into two divisions, tapering to a slender thread with a pear-shaped termination. It was in reference to these that the generic name, meaning ten pins, was given. The corolla is yellowish white, and on the inside has port-wine-coloured spots, larger and more numerous towards the bottom; the outside is covered with short linear marks and dots of the same colour a few shades lighter, and more dull. It is a native of Angola and southward to the Orange River, seeming to have a wide range of distribution, and was collected by Dr. Welwitsch on the sandy coast of Loanda, in 1853. It was figured by M. Decaisne (who received it from M. Persdorf as *Stapelia digitaliflora*) under the above name. It requires the same cultivation as *Stapelia*s, and will do well in a house where the lowest winter temperature is about 55° F. It should be on a shelf near the glass. Here also in flower are *Ceropegia Sandersoni* and *C. stapeliiformis*, perhaps the most easily cultivated, curious, and showy of the genus, presenting also the greatest contrast of form. The former was introduced to Kew a few years ago, and figured in the "Botanical Magazine" of 1869.

In the Cape house are *Crinum ornatum*, a fine species of moderate dimensions, having scented well-formed flowers; the beautiful pink-flowered *Zephyranthes carinata*; *Richardia albo-*

maculata, smaller than *R. æthiopica*, with much the same habit, and the addition of white spots on the leaves.

Of the *Begonias* in the next house, *B. Sutherlandi* is interesting from its being a parent of *B. weltoniensis*, one of the most valuable of all Major T. Clarke's hybrids. The other parent was *B. Dregei*. It is curious that the orange of the one and the white of the other should have produced a pink-flowered offspring. *B. Sutherlandi* is a very elegant species, found only in choice collections.

Recently open in the Orchid house are *Lælia purpurata*, *Ærides Lindleyanum*, *Oncidium urophyllum*, with flowers resembling those of *O. bifolium*, but smaller; *O. Janeirense*, the flowers, of which there are several, scarcely rise above the numerous leaves, forming a neat and compact plant; the white *Dendrobium cretaceum*, *D. albo-sanguineum*, the beautiful *D. crystallinum*, and *D. Parishii*. The very fine variety of *Phalenopsis grandiflora*, having produced flowers averaging  $4\frac{1}{2}$  inches across for the last six months, has the last now fading.

At the Rockwork the new *Gymnogramma triangularis* (see p. 468 last week) is planted out and growing freely; it should doubtless be under glass in winter. It is a native of Vancouver's Island and southward to Ecuador. *Lewisia rediviva*, now producing its flowers, is a plant of considerable interest and beauty. The individual *Portulaca*-like flowers are larger than the plant itself; they are pink, shading off to white in the centre. It is the "*Spatium*" of the Indians of North-west America, and the root is eaten by them as a vegetable. It is remarkable for its extreme tenacity of life. In the "Botanical Magazine" we are told that "The specimen from which our figure is taken is one of many which, when gathered with a view of being preserved for the herbarium, in British Columbia by Dr. Lyall, R.N., of the Boundary Expedition, was immersed in boiling water on account of its well-known tenacity of life. More than a year and a half after, it notwithstanding showed symptoms of vitality, and produced its beautiful flowers in great perfection in May of the present year in the Royal Gardens, Kew." *Aphyllanthes monspeliensis* has pretty blue flowers much like those of *Triteleia uniflora*, but smaller and of the darkest shade; no one could expect them from so Rush-like a plant. *Chlorogalum pomeridianum*, the Soap Plant of California, bears a fine panicle with racemose branches of white flowers. A few plants of *Primula farinosa* have a very attractive appearance. *Scilla peruviana*, var. *Hughii*, here in flower, is a variety almost everywhere doing duty for the species; it is often seen bearing the two names. *S. peruviana* is rare in this country; it has longer leaves than the above, with a distinctly ciliated margin; the difference in the inflorescence, if any, is slight. It has been received from the Continent as *S. ciliaris*, so that possessors of a plant with that name will probably find they have the true *S. peruviana*. A fine form of *Iris lusitanica* has the erect segments a very dark purple, the others have a golden blotch with a broad band of light brown.

In the Herbaceous Ground in flower are *Kniphofia caulescens*, new, and perhaps not yet in commerce. It was introduced by Mr. W. Saunders. The possession of a stem distinguishes it from all others; the leaves are glaucous, with little inclination to fall over; the flowers in bud are red, fading to pale yellow as they open. It is ornamental in flower and foliage, therefore well worth cultivation; it appears to be hardy in sheltered positions. *Iris Monnieri* and *I. ochroleuca* are very fine, of erect habit, with dark green foliage. They are much alike except in colour; the former is a golden self, and the latter pure white, with a golden blotch on three of the segments. *Linaria maroccana* is a new and pretty annual with plum-coloured flowers. It was discovered in Morocco, and brought home by Dr. Hooker, who says of it in the "Botanical Magazine" that it "was conspicuous in one district for its abundance and brilliant colour." *Tropæolum polyphyllum* is densely covered with flowers; it seems a very suitable plant to scramble over rockwork. *Dianthus brachyanthus*, a native of Spain, is of much interest, and has not yet appeared in the trade. It is in height about  $1\frac{1}{2}$  inch; the branches are straggling; the leaves are closely arranged, glaucous, and in size and shape like those of *Silene acaulis*; the flowers are no larger than those of *Saponaria ocymoides*, and almost identical in colour and form. The *Thalictrum*s are in fine condition. *T. aquilegifolium*, from its white filaments, is the most showy in flower; though otherwise distinct, it may be known as the only one in cultivation having stalked carpels. The leaves of the different forms of *T. minus*

appear to offer the best substitutes for Maiden-hair in the arrangement of bonquets. *T. collinum* has light green, nicely-cut foliage, and is perhaps the nearest approach respecting the shade of colour. *T. mucronatum*, of darker hue, is also good. *T. adiantoides* is recommended as one of the best; it is perhaps a form of *T. minus*.

## PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

*SAXIFRAGA FLORULENTA*. *Nat. ord.*, Saxifragaceæ. *Linn.*, Decandria Digynia.—Flowers lilac. "This striking and extremely local species was first discovered about the year 1820 (in the Alps of Fenestre) by an English tourist, who forwarded specimens to Professor Moretti of Pavia. It was rediscovered in the same locality in the year 1856, since which time it has been found in numerous distinct habitats. It appears to be tolerably abundant at an altitude of from 7000 to 9000 feet within a limited area of about eight miles square, in the higher regions of the watershed of the Maritime Alps, between the Col du Tenda and the valley of the Tinea north of Nice, on cliff faces and precipitous ravines facing the north. Mr. G. Maw, to whom we are indebted for the specimen figured, informs me that it mostly grows in single rosettes, some of which are 6 or 7 inches across; they are generally found under an overhanging ledge protected from the drip and direct rainfall, the rosette turning downwards, and never exposed to the sun. The plant was first introduced alive to this country by Mr. Moggridge. Its cultivation is extremely difficult, from the all-but-impossibility of obtaining well-rooted plants. It is an extremely shy bloomer; it probably lives to a great age before flowering, after which it dies. It seems entirely to fail under pot culture, but Mr. Maw informs me that M. Boissier has succeeded in growing it by wedging the rosettes firmly into the crevices of a brick wall with a northern exposure. Mr. Ellacombe has found it intolerant of frost at Bitton, near Bristol."—(*Bot. Mag.*, t. 6102.)

*CROCUS CANCELLATUS*. *Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia.—Flowers white. "It is frequent in the Ionian Islands, Greece, Asia Minor, and reaches, it is said, eastward to Armenia. In Greece it ascends to 4000 feet, and in Taurus to the Alpine region. The curious reticulated coats, with a texture which recalls cocoa-nut fibre, especially in the prolonged bristle-like fibres surrounding the neck (similar to those met with in *Albaca setosa* or *Chlorogalum pomeridianum*) distinguish this species from all the autumn-flowering Crocuses. Amongst the spring-flowering species coats of this kind are only found in *C. reticulatus* and *C. susianus*. The specimens figured were received from G. Wood, Esq., of Rochford, Essex, early in November, 1873."—(*Ibid.*, t. 6103.)

*CAJANTHE CURCULIGODES*. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monogynia.—Flowers orange. "A native of Malacca, Penang, and Singapore, according to Lindley, who described it originally from specimens collected in the two latter countries by Wallich, and who afterwards figured it in the 'Botanical Register' from a plant flowered by the Messrs. Loddiges, of Hackney. Lindley also gives Java as a habitat."—(*Ibid.*, t. 6104.)

*GREVILLEA FASCICULATA*. *Nat. ord.*, Proteaceæ. *Linn.*, Tetrandria Monogynia.—Flowers scarlet and yellow. "A native of Western Australia, from King George's Sound to the Swan River. It was discovered on the south-west shore of the former place in 1829 by D. Baxter. The specimen figured was from a Swan River plant, flowered by Mr. Wilson Saunders at Reigate in May, 1873."—(*Ibid.*, t. 6105.)

*LESSERTIA PERENNANS*. *Nat. ord.*, Leguminosæ. *Linn.*, Diadelphia Decandria.—Flowers pale purple. "All the species of the genus are natives of Southern Africa. The present one occurs in grassy places on the eastern side, from Albany to the Transvaal. The specimen figured was from a plant which flowered in the Royal Gardens, Kew, in July, 1873."—(*Ibid.*, t. 6106.)

**CHERRIES.**—*Frogmore Early Bigarreau*, a variety which will be found well deserving of cultivation wherever Cherries are cared for. It is really a tempting-looking fruit, the sample represented from the Royal Gardens, Frogmore, being, in fact, rather below the actual size, in consequence of the tree having been recently root-pruned. "It has also the merit of high quality, being a delicious fruit, and it is both early and an abundant bearer. We add Dr. Hogg's description:—Fruit large, obtuse heart-shaped, compressed on the side, and with a faint suture. Skin pale waxen-yellow in the shade, suffused

with deep red next the sun. Stalk 2 inches long, with a very small receptacle. Flesh remarkably tender and melting, as much so as in a *Gean*; very juicy, and with an excellent flavour. The *Bigarreau Noir de Schmidt* was obligingly sent to us by Mr. Rivers, of Sawbridgeworth, being one of the kinds which were so finely cultivated by him last year. It, too, is a very handsome Cherry of the very highest quality. Fruit large, bluntly heart-shaped, the stalk set in a moderate cavity. Skin dark shining blood-red. Flesh red, tender, juicy, and of excellent flavour."—(*Florist and Pomologist*, 3 s., vii. 121.)

*LELIA FLAMMEA*. *Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria.—"Imagine a flower of *Lelia cinnabarina* increased three times, with its brightest vermilion; give it a splendid yellow lip, with an amethyst-purplish wavy anterior lacinia, and a small white column washed under the stigma with purple: thus you have the first-rank beauty, raised by Mr. Seden at the Royal Exotic Nursery of Messrs. Veitch. Such is Professor Reichenbach's word-painting of this strikingly beautiful hybrid Orchid, which, on account of its uncommon and effective colouring, is one of the most welcome among the new acquisitions. It was raised between *Lelia cinnabarina* and *L. Pilcheri*, the former being in all probability the seed-parent; and it was awarded a botanical certificate equivalent to one of the first-class, at the Royal Botanic Society's Spring Show on the 25th of March last. The plant is of moderate stature, and has slender cylindrical stems, each terminating in a solitary, ligulate, oblong, fleshy leaf. The peduncles are terminal, somewhat elongated, and bear one or two flowers, possibly more; the individual flowers are some 4 inches across, with ligulate acute sepals and petals of a brilliant cinnabar-orange colour; while the lip, which is oblong and trifid in front, has the yellow side-lobes folded over the column, and the intermediate one rounded, denticulate, somewhat crisped, and of a rich crimson hue, passing into crimson veins on the disk."—(*Ibid.*, 133.)

## THE SEASON.

**KENT.**—On the 13th inst. we had a frost between 4 and 5 A.M. of sufficient intensity to cover some glass lights in a cold pit with "rime" enough to make a snowball, a most unusual thing so late in June. A thermometer a short distance off had not, however, fallen so low as the freezing point.—J. ROBSON, *Linton Park*.

**LINCOLNSHIRE.**—The weather is very trying alike to farmer and gardener. From May 14th to June 13th, the day of writing, rain has only fallen at this station on four days, amounting to the exceedingly slight total of 0.26 inch. During this time there have only been four really dull days, and six half-dull ones, the rest being bright, with, mostly, brisk drying winds from N.N.E. and N.W. On the 11th inst. it blew a gale, and on the limestone roads the dust formed a thick white cloud, while in the fens the loose vegetable mould filled the air, forming a dense black cloud. Forest trees drooped under the exhaustive strain, flowers lowered, and vegetables and crops generally assumed a shrivelled and unwelcome appearance. On the night following the open fields were white with frost, but in sheltered gardens the thermometer hardly dropped to the freezing point. The day temperature has often been over 80° in the shade, twice reaching 84°.

Bedded-out plants will not grow, and those that are not out cannot be planted with confidence or comfort. Early Potatoes are ripening prematurely and small; Cauliflowers it is difficult to prevent buttoning; Peas wiry, and of a hard steel blue colour; Beans ditto. Fortunately I sowed some in trenches, and now feel the advantage. In hollows it is easy to get water to the roots; on the level, or above it, next to impossible in a period of drought. Much damage was done to Apples and other fruits by a slight frost on the 18th ult., but only in low and damp places. In places high and dry fruit is plentiful: Strawberries small, although soaked and mulched; Raspberries, although cool and moist at the roots by mulching, are many of them malformed and "hide-bound" by frost and heat. In the fields Wheat holds on bravely, and looks well; Barley is beginning to fail; meadows rather light. Turnips, the few up have been devoured by the fly; the bulk cannot be sown, being too dry and dusty. Watercourses shallow; springs low; farmers frightened; gardeners uneasy—wearied with watering and waiting. Aphides are an immense crop. These are my worst enemies; the best friend being an hydraulic ram, keeping the garden trough filled. Wherever there is a few feet fall of water there a ram should be. They are invaluable—constant

in working; in attention almost costless, not requiring even oil. If I want to see economy, simplicity, and efficiency combined I look at the water ram. It is a "confined labourer" more than worthy of its hire. Get one and respect it.—J. WRIGHT.

WILTSHIRE.—We have had frost here three mornings in succession. On Saturday morning, the 13th, the Potatoes in the neighbourhood were damaged considerably. We are also getting dried-up very fast, having had no rain worth speaking of since April 7th.—W. T., *Longleat, Wilts.*

### A NEW MODE OF GLAZING.

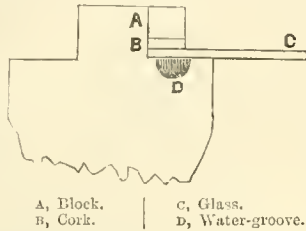
As I understand the writer of the article in the *Journal* of April 9th, 1874, p. 287, the mode is thus—

But if so, why not substitute a strip of wood the entire length of the bar for the "blocks?" It would be firmer, less work, and the glass could be wedged at any part; or a groove might be cut out of the solid bar with a "plough." I am not surprised that the water-groove is unsatisfactory—the weak "link" in the "chain!" In my time I have had a good deal to contend with as regards the insinuating propensity of water through cracks in walls, gutters, &c., and nothing I have ever tried has been equal to old nail bag. Putty and cement are not "fit to black its shoes"—they crack; but the strand out of an old nail bag saturated with white lead can be caulked-in, and there it will stick, and does not crack.

Now, why not substitute this, or something of the nature, for the cork? It would be elastic and watertight; and, put in with a flat-pointed stick, the glass could be made as tight as wished, and there would be no ins and outs for dirt to lodge; or the glass might be bedded on the strands, or flat felt made on purpose, and the cork wedges used.

This mode would certainly not admit of removing the glass and replacing it twice a-year; but I doubt much whether this "facility" would prove practically worth anything.—V.

[I for one am much obliged to "V." for the suggestion of a packing material instead of either putty or cork, but how far the fibrous substance of which nail bags are made will answer on the score of durability I hardly know, as I expect the nail bags of the present day are different from those of yore, which were made of hemp, for a great deal of sacking and other packing cloth is now made from jute, and probably nail bags are also manufactured, in part at least, of the same fibre, which is inferior to hemp in durability. When used in conjunction with white lead it may be durable enough, and the idea is both ingenious and practical. I cannot, however, agree with substituting a continuous slip of wood for the blocks and wedges, for the slip cannot possibly be made to fit so tightly to the permanent portion of the bar but that the wet will find its way in; and as it has to be taken off each time any repairs are wanted, the unnauling and nailing again would soon destroy the small piece of timber there is to work upon, so that I find it would not work satisfactorily. The groove cut in the bar by ploughing-out a place to receive the glass is an old affair. I have the remains of some frames by me that were made in that way before 1849, when I first became acquainted with them; but as all the glass had to be put in at the bottom, and a little putty was still used, it was a very difficult matter to push a square up to the top when it became fixed lower down, so that it was often found necessary to chip away a part of the timber that substituted the putty to enter a square, and this being frequently repeated, the original condition was much departed from. A groove wide enough to receive the cork wedges might do better, but then there is the difficulty about wet driving in at the edges, which is, as your correspondent justly observes, the weak point in the mode alluded to in April; and to remedy which I asked the assistance of others whose pursuits enabled them to offer suggestions. To "V." I am much indebted, and hope something will result from the caulking material he recommends. The great difficulty seems to be the liability of so many things to shrink under the hot sun they must endure; and although they may swell and become watertight when rain



falls, they will not always become so immediately the first drops fall, as we know the best-made canvas tent lets water through for a time, although afterwards, when the material is thoroughly wetted, it does not do so, and in this case I find the complaints of drip inside will be very great for a time.

As "V.'s" experience has brought him in contact with other matters, might I ask if he knows of any simple mode of preventing damp striking through brick walls only 9 inches thick, and that have been plastered on the bricks inside? Many years ago I applied a wash outside that was recommended in the *Builder*, but it did no good, and a coating with oil has been since tried without benefit. Paint is objected to, and plaster would alter the design of the building, and for reasons needless to explain battening inside cannot be done. If "V." can suggest a remedy, he will confer a benefit on many now puzzled to rectify an error too often made in the building trade. Further information on glazing without putty will also be acceptable, as I am certain the mode recommended is capable of vast improvement.—J. ROBINSON.]

### CAUSE OF FRUIT CRACKING.

YOUR notice of the explanation given by an English gardener to account for the cracking of certain fruits and vegetables, should have received attention before this, but a press of labour prevented it. The means devised by you to prove the presumed law do not, in my humble opinion, go far enough—i.e., they constitute only half an experiment. Perhaps my explanation of the phenomenon may be more clearly comprehended by the general reader if I briefly state the law of endosmose and exosmose.

Two fluids, separated by a partition or diaphragm, which one liquid wets (adheres to) more readily than the other, are thrown into currents. The liquid wetting the partition more easily, flows through the more rapidly, and consequently sends the greater quantity through the partition, and is called the endosmotic current, from two Greek words, signifying impulsion or flowing inward. The liquid wetting the partition less easily sends the less quantity through the partition, and is called the exosmotic current, from two Greek words signifying expulsion or flowing outward.

Now, chemists have learned by a series of experiments upon various partitions, which liquids, compared with each other, are endosmotic and which are exosmotic. Pure water is endosmotic compared with all the juices of fruits and vegetables, either pure or diluted with more or less water. "A Tomato placed into a saucer of water for twenty-four hours" is not the manner in which to perform the experiment. Nature's plan for cracking fruits and vegetables is entirely different. Those of us who have closely watched the cracking of fruits and vegetables upon healthy parent stalks, have observed this phenomenon after a "spell of wet weather," as noticed by the English gardener.

By some means, which I do not profess to understand thoroughly, the juices become diluted, and extended to the full capacity of the fruit or vegetable, which accounts for the "watery" taste so often complained of when fruits and vegetables ripen in very rainy weather.

Now, if the rain continue, or if it continue cloudy for any length of time, by means of which the skin of the fruit or vegetable becomes covered with moisture, endosmotic action sets in, the skin is distended beyond its capacity, and it cracks. I have performed the experiment time and again, by keeping the ground surrounding the plant saturated for several days, until the fruit or vegetable becomes distended, as I think, by capillary attraction; then apply water to the outside, and the fruit will invariably crack. You perceive that I fulfil all the conditions of nature by saturating soil and air.

I have discovered that fruits with entire skins are most easily cracked—viz., Tomatoes, Grapes, Plums, Currants, &c. Those with a hairy covering or furze, like the Gooseberry and Peach, with those having an opening like the calyx of the Crab Apple, Apple, and Pear, appear to be provided with a valvular arrangement existing in the hair, furze, or calyx, by which the excessive moisture escapes. The silicious nature of the skin of a mature Apple entirely prevents the cracking by the means that I have briefly attempted to explain, as water does not wet it. I have frequently enlarged Gooseberries by suspending them over water, and Apples, by washing with water slightly acidulated with sulphuric acid, without any evidence of cracking.

Almost all observers have seen Plums and Grapes that have

fallen into a stream, with the skins burst, if the fruit adhere to the peduncle. I have recognised this bursting by endosmose or by capillary attraction, as the means devised by nature by which many seeds become separated from their pericarp, so as to come in contact with the soil under the most favourable conditions.—S. B. HEIGES, *President of the Pennsylvania Fruit-Growers' Society.*—(*American Gardener's Monthly.*)

#### DR. MOORE'S NEW HYBRID SARRACENIA.

THE species selected with a view to crossing were *S. Drummondii* and *S. flava*, the latter to be the seed-bearing parent, and the former to supply the pollen with which its flowers were to be fertilised. The pollen was applied, the usual precautions being taken that neither that of the plant operated on, nor any other species then in flower, should affect or interfere with the hoped-for result, and before the summer was over Dr. Moore had the gratification of gathering a ripe capsule of seed. This was in 1868, and the following spring the seed was sown in pots well drained and nearly filled with finely sifted heath mould. The seed was dusted over the surface, and merely covered with a thin stratum of damp bog moss (*sphagnum*), a piece of flat glass being laid over this, and the pot placed in an intermediate or moderately warm house. In about a month or so the young plants began to show. The seedlings showed a good deal of liability to damp-off the following winter, but with those which pulled through there was no after-difficulty. As far as the foliage, pitchers, and habit could indicate it, the doctor had not very long to wait for evidence of a successful and interesting cross, and early last month [April] the development of flowers still further confirmed it.

This hybrid partakes in a remarkable degree of the characteristics of both parents. In the rich veining and exquisite leaf-painting of the upper portion and lid of the pitchers, as also in its purple-coloured flowers, it bears the impress and likeness of the male parent; while in the habit and less persistent character of the leaves it shows the maternal traits. It is very probable that a cooler treatment than that which is agreeable to *S. Drummondii* will suit it. This, the first hybrid *Sarracenia* yet flowered, was one of the lions of the recent International Show and Congress at Florence, Dr. Moore having brought it and several other living items of much botanical interest with him on the occasion of setting out to take part in that important and widely-representative gathering. We believe our plant is to bear the name of the raiser, and will in future be known in collections and plant lists as *Sarracenia Moorei*.—(*Irish Farmers' Gazette.*)

[In a subsequent number of the same periodical the Editor very properly adds:—"It now appears that the honour and credit of raising a hybrid *Sarracenia* does not belong to Dr. Moore alone, though to him certainly attaches the honour of being the first in the field with a flowering specimen. At the London Royal Horticultural Society's Great Summer Show, Mr. Stevens, of Trentham Gardens, exhibited a new hybrid *Sarracenia*, raised by him at that princely establishment. It is the result of a cross between *S. purpurea* and *S. flava*. In form and habit it resembles the parent last named, but the deep red or purple markings on the pitchers show its affinity with *S. purpurea*."—Eds.]

#### FLOWERS FOR OUR BORDERS.—No. 34.

##### GELASINE AZUREA.—BLUE GELASINE.

THE *Gelasine azurea* was first introduced into this country in the living state in 1837, having been sent from Boston, U.S., to the collection of the lamented Dean of Manchester at Spofforth, where it flowered and ripened its seed. It is a native of the Banda Oriental, and the province of Rio Grande, where it occurs in stony places. It is sufficiently hardy to bear exposure in this climate, especially if covered with a few dry fern leaves, and, like some of the *Irises*, retains a part of its foliage through the winter. It is readily raised from seed, and young plants will produce flowers the second season; so that it will, we hope, soon be classed amongst the commonest of our hardy bulbs. The seeds germinate most freely when sown as soon as ripe, on a gentle heat, and the seedlings should be kept growing through the winter. The plant also produces offsets, by which it may be increased.

It grows from 18 inches to 2 feet high, the flower stalk being furnished with four bracts placed at regular distances, the upper one being leaf-like. The leaves are from 1 to 2 feet in length,

and about 1 inch in breadth, pointed at their extremities, and plaited, as in the case of the *Tiger-flower* (*Tigridia Pavonia*). The flowers are produced from a spathe, which is shorter than their footstalks. The funnel-shaped limb of the blossom is divided into six regular segments, alternately smaller, which are united at the base into a tube; each segment is marked with white at its base, on which are several black spots, the segments themselves being of a deep blue tint. The three filaments are united into a short tube, in other words monadelphous, the anthers tapering upwards, and opening by their sides. Style simple, divided into a three-lobed stigma. Capsule egg-shaped, opening when ripe at the top by three valves. Seeds angular, flat at top, tapering downwards. One of the divisions of the flower, and also the monadelphous filaments, are shown separately in the engraving.



*Gelasine azurea.*

As this plant is not commonly kept in stock by London bulb merchants, it may be useful to some readers to state that it may be had of Mr. Louis Van Houtte, the well-known nurseryman of Ghent, Belgium.

Before quitting this subject, we are desirous of calling the attention of our readers to one or two other very interesting genera of Iridaceous plants, not commonly seen in cultivation. One of these is the *Cypella Herbertii*, a beautiful bulb from Buenos Ayres, nearly hardy, and certainly less tender than the *Tiger-flower*, which it somewhat resembles. The flowers are large, and of a vermilion tint. It is a summer-flowering bulb, and may be treated exactly as the *Tigridia*—that is, planted in April in the open border, and dug-up in autumn when the foliage is decayed. The bulbs may be purchased in a dry state in autumn of most of the London seedsmen for about 6d. each, but care should be taken to secure ripened roots; many of them, being dug-up in an immature state, decay on being again planted, or at most produce only a few unhealthy leaves.

Equal in interest to the *Cypella*, and, perhaps, more manageable, is the *Pardanthus sinensis*, the *Moræa sinensis* of the older botanists. In habit this showy plant resembles one of the smaller evergreen *Irises*, the leaves being flattened, distichous, and diverging in a fan-like form. The flowers are produced on a dichotomous scape, about 1½ to 2 feet high, which arises from the midst of the central leaves, and bears several spathes, from each of which emerge three or four

*Ixia*-like flowers, about  $1\frac{1}{2}$  inch in diameter, with six spreading segments, of an orange colour, streaked with orange-red. They are somewhat fugacious, but this defect is compensated for by their number. The *Pardanthus* is not absolutely hardy, but will only need a covering in severe weather; it requires a warm and rather dry situation and soil. Increase may be effected by division in spring; or by seeds, which are generally ripened. Seedlings generally bloom the second year, occasionally the first if sown very early.

To these we may add the *Bebertia aurantiaca*, a half-hardy bulb, growing about  $1\frac{1}{2}$  foot high, with linear foliage and numerous star-shaped flowers of a vermilion tint. It does best in a mixture of sandy peat and loam, and may either be planted in autumn—in which case the bulbs should be at least 1 inches from the surface, and have a pot turned over them in severe weather—or planting may be deferred until March. As the bulbs are small and cheap, several should be planted together in a clump.

The *Sisyrinchium californicum* is another useful plant deserving mention, and has the advantage of being hardy in most localities. It is an herbaceous plant growing about 1 foot high, the leaves flat and almost linear; throughout the summer it produces numerous bright yellow flowers, lasting only a single day, about 1 inch across, with six spreading segments. In a friable moist soil it increases with great rapidity.—(*W. Thompson's English Flower Garden, Revised by the Author.*)

### TREATMENT OF FARMYARD MANURE FOR GARDENS.

Few subjects are of more importance to the gardener, or have led to the expression of more opposing views from different writers, both practical and scientific. One class recommends vehemently that manure should be thoroughly rotted in the yard before putting it out on the land, and support their position by arguing that manure is not food for the plant until it is decomposed; also, that when manure is rotted, it requires less labour to haul and spread it, in consequence of the great diminution in its bulk. This latter argument can only count on the supposition that although the bulk be so greatly diminished, the virtue of the manure all remains, which is most certainly a mistake. Another party advocates putting out the manure while quite fresh or "green," and immediately spreading it on the land. Advocates of both measures point triumphantly to results as conclusive evidence that they are right.

It is not to be denied, of course, that a marked effect will follow either course alluded to, especially if sufficient manure be applied; and yet both of these plans are greatly wrong, though partly right. It is quite true that manure is not food for the plant until it is decomposed or "rotted." But the fatal objection to rotting in the yard is that by so doing we lose, say, one-half of a valuable commodity. On the other hand, it is true that putting out green manure puts all the constituent elements on the land; yet the following grave objections exist against the plan:—1, It does not increase the manure; 2, It does not improve the quality; 3, It seeds the land with weeds; 4, It does not save labour or time, and may cut the ground up objectionably. But can a process be suggested which possesses all these advantages without the drawbacks? Yes, I am confident that the following process will meet all objections, and will also increase the bulk of manure; will improve the quality, will kill the weed seeds without increasing the labour, and will throw much of that work into seasons of the year which are not so precious as that in which yards are usually emptied. The process is as follows:—On the ground where it is desired to have the manure, select an elevated position, and with the aid of a pickaxe and shovel make a long shallow trench, say 6 or 7 inches deep, and 2 or 3 feet wide; throw the earth out on the upper side of the trench. This trench may be made at any time, but one must always be prepared just before winter, say in the early part of November. Next, in cleaning the stables, always shovel immediately into the cart or waggon, and haul at once to the trench, where it may be dropped in a manner most convenient for covering. Then cover the manure as soon as possible with earth taken from either side of the trench, until the manure is covered with twice its bulk of earth. The drier the earth and the more pulverised the better. Let the earth cover all the manure as effectually as possible, to arrest the gases arising from the decomposing manure. In this state it may stand as long as

desired without loss, if the weeds are not allowed to grow on top of it. A month before using it should be examined, and if not thoroughly rotted, the heap should be lightened up and stirred, to admit air and moisture. When ready for use, the manure has almost disappeared, and the earth having absorbed all the gases evolved in the act of decomposition, has become manure. But, inasmuch as we doubled the bulk of earth to the manure, we have twice as much manure as we had, and moreover we have two loads on the high part of the ground for the hauling of one, thus lessening greatly the labour of drawing to the garden. Hence it follows that this process pays best where you have to haul farthest and highest; the spreading, being downhill, is easier.

The main principle of this process is the well-known quality which earth possesses of "fixing" gases. The earth retains these gases, which are the vital fertilising properties, until the plant root comes in contact with it. This fertilising earth is very durable, as "nothing is lost;" indeed, its effects have been plainly visible on the spot where it had been spread years and years before. By this process I conceive that every possible objection in the treatment of manure is obviated, every leak stopped, and every advantage gained. When the compost is thoroughly "cooked" or rotted, the weed seeds must be killed, and the manure is fit food for the plant. It is a manure fit for any or all crops. For digging-under and top-dressing, we have the high authority of the late Professor Johnston for saying, that when a compost is made of more than one constituent, the mass is equal or superior to its best part. From this it would follow that the whole of the compost heap is at least as good as the best ingredient which came out of the stable, and that the quality of the whole is improved.—(*Cultivator.*)

### MIMOSA PUDICA.

THE family of *Mimosa*, like many others of the same order—Leguminosæ, are attractive by the elegance of their pinnated foliage alone. Their inflorescence, too, if not belonging to the grand in size or gorgeous in colour, is deserving appreciation by its softness in texture and tint. The family, moreover, affords boundless scope for study, not only to the merely curious, to the innate novelty-lovers, but to the astute philosopher who would dive into the secret recesses of Nature by the light of science, and appropriate, if possible, the hidden mysteries, and evolve the motive power of many wonderful works. That all plants have periods of rest—i.e., "go to sleep" at longer or shorter intervals, is a necessity of their being. It is only, however, noticeable with many by summer and winter, but the *Mimosas* give palpable evidence of a nocturnal rest and a diurnal awakening, as clearly as the rising and setting of the sun, or as the various representatives of the animal world. These striking characteristics give to the family an interest above and beyond any mere beauty of leaf or flower, and in no species are they so clearly portrayed as in the well-known annual form *Mimosa pudica* or *sensitiva*. The sleeping and waking of this plant, its extreme irritability, and its sudden shrinking from the sense of touch, have only a counterpart in the sensibility of the animal world, which invests it with an interest and pleasure-giving property which only increases with increasing years. It is no small testimony to the merits of any plant that it can preserve all its pristine powers of attraction over a period of upwards of two hundred years, for at least this period has elapsed since its introduction from Brazil, and its power to yield gratification is as fresh as ever. The octogenarian still looks over it with quiet contemplative pleasure, and the first glance of it fills the child with ecstasy. If it can and does give repose to age, and awakens a latent faculty in the spring time of youth, there is no wonder that it is popular, no wonder that it is coveted in conservatory and window.

To all the merits of this old and long-established favourite is added an advantage which should certainly be appreciated by the great mass of garden lovers, and that is the ease of having it in any desired quantity, and its simple mode of culture. It neither demands the outlay of any great cost nor skill. A packet of seed, structural convenience, and attentive care are the three main requisites.

First with regard to seed. It is soon disposed of, as it can be had for 6d. or 1s. from any respectable vendor. The second point is of more moment, for being a stove plant it must have heat. With a temperature of not less than 60° by night in the spring, all the rest is plain sailing. With a plant stove having bottom heat all is provided, but as most places

lack this we must fall back on the frame and hotbed. In conjunction with Cucumbers and Melons the Sensitive Plant can be grown admirably in its early stages, and until the weather is warm enough to permit its removal into a cooler frame, conservatory, or window. And here let a common evil be noted, and a word of caution given. Measure first space and convenience, and do not attempt to grow more than can be well accommodated. Six plants well grown will give more satisfaction than six dozen indifferently managed. When more is attempted than can be carried out, both plants and Cucumbers are spoiled. This contingency must ever be guarded against. But anxious that the greatest possible number should enjoy this interesting plant, and recognising what is a fact, that a small healthy specimen grown in a makeshift way yields as much real pleasure to the owner as the most perfect example of culture does to those having the best appliances at command, I will go a step further on the point of structural convenience, and say that those having neither a stove nor a hotbed may yet have little Sensitive Plants to instruct and please their little home treasures—the “dear bairns,” and if that is so we may trust the pleasure of pater and materfamilias to take care of itself.

And now to the third point—attentive care. Having due convenience to grow the plants well, seed should be sown in February, and treated as to heat and moisture exactly as for young Melons, with this exception, that Melons potted singly from the seed pan make new roots at once, and receive little or no check if well attended to. With the Sensitive Plant it is different. It is frequently forgotten that the roots as well as the foliage of this plant are sensitive. Seed is accordingly sown in a pan, the young seedlings shaken out and potted singly or several in a pot. Although plants may do well by that plan, it is not the best. This is far preferable: Take clean—mind, scrupulously clean—3 or 4-inch pots; drain thoroughly; fill with turfy peat and loam half-and-half, and a nice admixture of pure sand and charcoal. If single plants are required, insert three or four seeds. When up, remove all but the best with a sharp knife just within the soil's surface. When the pots are full of roots—that is, just matted round, shift into 6 or 7-inch pots, increasing the drainage but decreasing the peat. The top may be removed when 5 inches high, but do not top and pot at the same operation. The next shift may be into 8 or 9-inch pots, using rich open loam, with a layer of good manure over the crocking. When full of roots stand in saucers, and when the soil is exhausted give clear weak soot water, and if syringed with it at times it will be beneficial in keeping insects down and the foliage of a rich healthy green. That mode will result in fine healthy plants. If huge bushes are wanted, sow more seed to begin with, and grow on three or five plants in a pot. That is for large plants and full convenience for producing them. For handy decorative plants where there is only a frame and greenhouse, treat the same but sow later. If sown too early they are driven out of the frame by the Cucumbers before the greenhouse is warm enough to receive them. When sown in April they will easily transfer into the greenhouse, as by the time they are ready the natural temperature of the latter structure will be sufficient to receive them, say in June. Such plants will grow on and

flower. They can, of course, be sown later, even up to now; but in this case they should be grown four or five in a pot, and not be stopped at all, and then, perhaps, they will not flower, but yet will please.

And how for the million who have no hotbed, and perhaps no greenhouse, but a lot of bright eyes and rosy cheeks to decorate their homes? Well, let the little decorators have a plant to obey their touch and make them dance. Provide as many 6-inch pots as pairs of eyes; initial them; drain them; fill with light soil—no, not fill them, but leave rather more than an inch from the surface of the soil to the rim of the pot; make the soil tolerably firm, then water it thoroughly. After this sow a dozen seeds one-eighth of an inch deep, and cover over with a square of glass. Stand the pot in a saucer of water sufficiently deep that it will rise through the soil, and keep the surface moist without making it decidedly wet. The

seed will soon germinate in any warm window or greenhouse. As the plants grow tilt the glass a little more and more until it is removed altogether. If all the seed grow a few of the seedlings may be thinned out; the rest will make quite nice little plants during the summer, and please very much the little children, and mayhap some great ones too.

Sensitive Plants are subject to the attacks of all sorts of insects if starved into ill-health by neglect of water or indifferent culture; kept really healthy they are but little troubled by them. Belonging to Class 23, Polygamia, they produce some hermaphrodite flowers, as may be seen by the accompanying engraving. The branch has been caught napping, but whether just going to sleep or just waking up “deponent sayeth not.”—J. WRIGHT.



*Mimosa pudica.*

TWEEKSBURY HORTICULTURAL FÊTE.—This town has been famed for the last eight years for

having most successful shows. The liberal schedule of prizes offered this year entitles us to expect that the Exhibition in July next will eclipse even former ones, especially as it is to be held in connection with the county agricultural meeting and the annual regatta.

## KNOWSLEY HALL.

THE SEAT OF THE RIGHT HON. THE EARL OF DERBY.

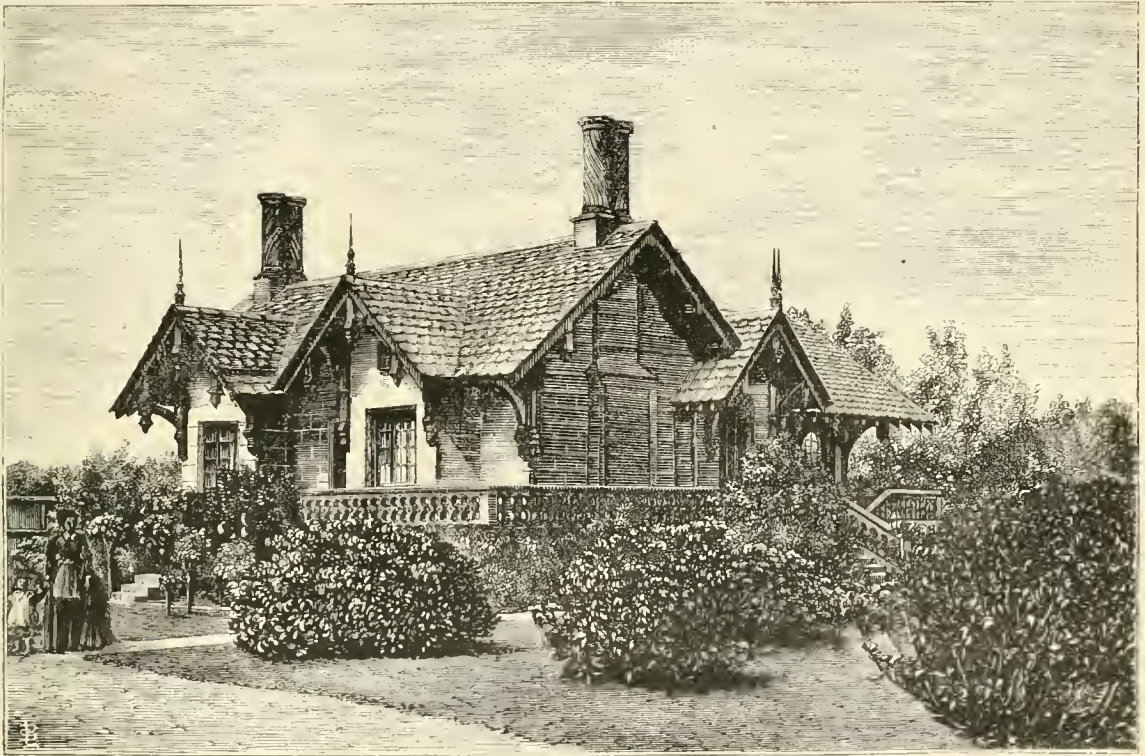
AMONGST those families who have left their mark on English history, the Stanleys of Knowsley Hall hold no mean place; and to those who are for ever prating of the degeneracy of race, it is well to be able to point to two such men as the late and the present Earl, men of whom all true-hearted Englishmen are proud, whatever be their political creed, for they recognise in them those who, in their very different characters, have each had the welfare of our land at heart. No one can easily forget the noble manner in which the late Earl headed the movement on behalf of the Lancashire operatives at the time of the cotton famine; and on every side, and from all parties, we hear continually that the honour of England is safe when the Foreign Office is presided over by the present Earl.

In looking back on the fortunes of Knowsley we must go to the times of Richard II., when Sir John Stanley, who is de-

scribed as "a cool, shrewd, and efficient man," (a character which might be taken as descriptive of its present owner), acquired it, together with Lathom, by marriage, and became possessor of the Isle of Man by gift. It was his grandson who, as second Baron Stanley, placed the crown of England on the head of Henry VII. on the field of Bosworth, and was made Earl of Derby. The glory of the house is, however, generally considered to have been James, the seventh and "Great Earl of Derby." He it was who married Charlotte de la Trémouille, daughter of Claude, Duke of Thonars, whose heroic defence of Lathom is so well known, and who has found, if not an historian, at any rate a principal advocate, in Sir Walter Scott in his "Peveril of the Peak." Coming down to later times we have to notice that the grandfather of the present Earl greatly enlarged the gardens at Knowsley, and was a devoted student

of natural history. His collection of mammals and birds was celebrated throughout Europe, and his museum now forms part of the collections of the Liverpool Free Library.

Those who approach Knowsley, as I did, from the Liverpool side, fail to see it in its best aspect, for the grand entrance is on the other side, close to the town of Prescott, where stand two lodges with handsome iron gates, and where, as elsewhere throughout the park, the motto of the Stanleys, "*Sans changer*," meets the eye. The park is seven miles in circumference, beautifully wooded, but, to my mind, lacking those grand features which distinguish some I know. This arises in a great measure from the flatness of the district; and the extent of trees of course in such a case shuts out the view. The house is a large and not very handsome building of various periods, but is said to be comfortable and roomy. I suppose



A COTTAGE AT KNOWSLEY.

such places as I saw last year, Trentham and Chatsworth, rather spoil one for Knowsley.

Lord Derby had very kindly written to his agent, Mr. Hale, by whom I was most courteously received, and I was somewhat amused to find that even the people who lived in the park could not tell me where he lived. I do not lay it down to their stupidity, but to my southern tongue, for, as the foreman said to me, "If you asked them where Knowsley was they could not tell you, perhaps; but they would know 'Narsley' if you asked for it." At the period of my visit his lordship's able gardener, Mr. Harrison, was absent, but his very excellent foreman took me through the houses and gardens.

One too often hears on going over gardens depreciatory remarks on the last incumbent's work, to be used as a sort of foil to set off the present state of things; but at Knowsley there has been really such a condition. The late gardener was for a very long time in a very bad state of health, and consequently things fell into a very indifferent state. He was at last obliged to resign his post, and has been succeeded by Mr. Harrison, who was lately gardener to Mr. Wright at Osmaston Manor, and under his able management Knowsley will soon re-establish the prominent position it has always held as a fruit garden. There is but little ornamental gardening. Between the gardener's house and the walled-in garden there is a very effective Rhododendron garden, and it was somewhat surprising to find the plants perfectly untouched by the very

destructive frosts we have lately experienced. The soil, too, is a strong loam—another instance that this tribe of plants succeeds in other soil than peat. Nothing could be more vigorous or healthy than they were.

I must confess to a great difficulty in going through the details of a place like this. Of course in every large garden there are Pine pits, vineries, Peaches, &c., and I do not know that there is much interest in stating that the Pine house is so many feet long and the succession pits in good condition, &c. I must therefore do as I have done in recording my visit to other places—notice a few salient points. In the flower garden there was an ingenious contrivance I noticed for the purpose of having a sloping bank covered with Roses. The bank was turf, and of course the difficulty was to get at that to keep it neat. Mr. Hale hit on the contrivance of an iron trellis on hinges. The Roses are planted just in front of it and tied on to it, and then when the grass has to be cut the trellis is moved on the hinges and the grass mown, when it is again laid down. One error, I think, was in using standards on Briars. I think that had all been the Manetti, as some were, it would have answered better.

The houses are, most of them, old-fashioned with small panes of glass; and although not so sightly as the newer kind with large panes, yet I believe the experience of many is now that both for fruit and flowers glass may be too large. The arrangement of the Pine house, which is about 100 feet long

by 30, seemed to be good. It was well filled with Pines, while trellises round contained Cucumbers and Melons, and Strawberries were overhead. Trentham Hybrid seemed to be the favourite amongst Melons, and Telegraph amongst Cucumbers. The Strawberries used were Black Prince, President, Prince of Wales, Dr. Hogg, Wonderful, Oscar, Sir C. Napier, and Hayward's Prolific. The last-named is a kind I have never seen nor heard of before. It is not a very shapeable one, but certainly bears out its name. It is of the Sir Charles Napier type, as to flavour somewhat acid, but apparently a very useful fruit. I do not see it in Dr. Hogg's "Fruit Manual." Figs are here made a prominent fruit, and in the Fig house were a good number of trees which had produced their fruit, the kinds used being Brown Turkey, Lee's Perfection, Castle Kennedy, and Grand Florentine. The Vines were all recovering from their former treatment, and many of them were in most excellent condition. Child of Hale, Golden Champion grafted on Mrs. Pince, Black Alicante, Lady Downe's, Black Hamburgh, and Madresfield Court were all very fine. The Peach trees in the houses had produced a wonderful crop, and so had the Cherries, but both of these fruits were nearly past, successions were coming on; and then there was the orchard house. In one house where Mr. Harrison is getting together some good Orchids is the largest, and I should think the oldest, plant of *Stephanotis* I have ever seen. The stem was as thick as one's fore arm, and it ran the entire length of the house.

Out of doors the fruit and vegetable culture was of the first order. By-the-by I did see one vegetable forced here I never saw before—viz., the Watercress. It is a favourite of the Countess, and is cultivated here in boxes, and had all through the winter. It is a somewhat curious instance of the capriciousness with which frost deals with us, that nothing appeared injured by it, even although the soil is loam, the situation northerly, and the place surrounded by foliage.

Knowing how much the Earls of Derby have always been beloved by their immediate followers, who were ready at a moment's notice in more troublous times to follow their fortunes in the field, whether at home or abroad, one was not surprised to find that the arrangements for the comfort of those employed on the estate, and especially in the garden, was amply provided for. The accompanying is a copy from a photograph of a house on the grounds occupied by one of the garden labourers who is past work and has been pensioned off, while I have never seen more comfortable bothies than those provided for the men. The foreman has a sitting-room and bedroom to himself. There is a most comfortable kitchen, where the men can both cook their food and sit. Each man has a separate bed, and only two beds in each room. All is lighted with gas, and there is ready access to water for washing. They are kept supplied with the principal gardening publications, and I could only notice one defect—viz., the want of a common reading-room, where they might have a small library, and where it would be more comfortable for them to enjoy their papers.

I hope my notice will not be considered too scant, but I really do not see the value of recording what can be of little interest, and have only noted those points which ought to interest all alike. I can only add that every facility was given me by Lord Derby and Mr. Hale his agent, and that I much enjoyed my visit, the only drawback being the absence of Mr. Harrison.—D., *Deal*.

### THOUGHTS ON WATERING.

THE season of heat and drought is again upon us—the season that brings to many gardeners a restlessness that is only allayed by a fall of rain, or by seeing the irrigating apparatus, of whatever description, at work. Taxing as it does, in many cases, the working strength of the gardener to a great and often unnecessary extent, a discussion of this subject may not be unprofitable. Apart from, and yet having a direct influence on the necessity for, and reaping the best advantages from, artificial irrigation, high cultivation of the soil is of the greatest consequence. Physiologists have long proved that the reason why plants send roots into subsoils is merely for the moisture that is to be found there; gardeners have arrived at the same conclusion, though by different means: therefore, where high cultivation is carried out, the subsoil is treated in the most liberal manner, till, in process of time, one deep rich mass of soil is formed for the benefit of crops, and the roots of those established can revel deep down out of reach, comparatively, of the drought that withers up the shallow roots. This

same principle under another aspect is seen in the treatment of fruit trees, of which we instance the practice of inducing the roots to keep to the surface, mulchings being given to conserve the moisture and keep the roots at home.

Another point of great importance for the conservation of moisture, and one which the writer of "Hints to Amateurs" enforces, is the free use of the hoe: ground of good body kept well hoed will stand a wonderful amount of drying-up. Mulching should be done whenever circumstances admit; it is of especial advantage in the case of fresh-shifted shrubs or fruit trees, but it need not be limited to these. When all means have been taken to make the most of natural moisture, watering, especially in light soils, is often a necessity. We are of opinion that much labour in watering newly-planted crops in dry weather might be saved were they planted when comparatively small; not only so, but the system of transplanting seedlings into their permanent quarters, when in a small state, is more likely to give the best results than when left to a larger size. But in any case, a watering that moistens well round the roots and beneath them, succeeded by a hoeing, is far better than dribblings given every evening to be licked up by the sun the next day. Anyone can prove this for himself by trying the two ways on beds of young pricked-out Cabbages, Celery, &c. The healthiest plants will be those that have few waterings, if kept well surface-stirred.

The flower garden generally comes in for the largest share of attention in this respect, and we have noticed that the different modes of watering the plants have been somewhat as follows:—A, directly the plants are into the ground, gives each one individually a watering. Any number of waterings that succeed this are all done after the same fashion. This strikes us as having a tendency to keep the roots from spreading freely. B imitates Nature's way of applying water all over the bed or border; but, unfortunately for the poor plants, it is in imitation of April showers, which do little more than wet the buds and foliage. Where the means of applying water necessitate a large amount of hard work, as is the case when water has to be carried some distance, workmen are very apt to put the plants off with a surface-sprinkling. The evils of this mode are evident, but, through a little want of thought, it is not uncommon. If the weather is not excessively drying, a surface-sprinkling two or three times a-week keeps the plants in a fresh state. C is an "out-and-outer" for water. Celery is a ditch-plant—*ergo*, it must be kept in wet-ditch order, to the no small detriment of the crop. Flower beds come in for a daily flooding, or one as often as circumstances will permit. Now this continual on-pouring is quite opposed to what Nature teaches, save in the case of bogs or marshes, which are out of the gardener's sphere. Though it is not the wisest thing a gardener can do to blindly follow Nature's mode of working, for reasons which are obvious; still, when circumstances arising from cultivation and other causes are allowed for, we can have no better guide to follow.

We find that the rainfall in this country ranges, roughly, from under 2 inches to about 4 inches monthly; some seasons dry districts are, of course, under the lowest average, whilst the highest may be largely exceeded. Now, if there be any force in Mr. Simpson's theory with respect to the mean in temperature being misleading, in this case of mean rainfalls it would lose none of its force; in fact, it is patent to everyone, for seasons occur when scarcely any rain falls for long periods, when drought consumes the nation's home resources in the way of vegetable food and fodder. In such cases of continued drought over a long period, or of no rain for comparatively short periods, the question, with the data of average rainfalls, which is now-a-days accessible to everyone, and the quantity of water required to water a known surface, resolves itself into a merely arithmetical one. For instance, if we take the average rainfall throughout the country at the monthly mean of 3 inches, it would not be out of the way to allow for a border, say 80 feet long by 10 wide, 1250 gallons of water—practically, one thirty-gallon water-cart emptied on every 2-feet run. We do not imagine such a quantity too much where the tilth is a good depth. There is no fear, after such a soaking, of the roots being short of moisture for some time; and after thoroughly stirring the surface as soon as it gets dry enough to be workable, one may safely rest at ease through some weeks of drought. We believe this is the only sensible system of supplying water to borders, beds, quarters of kitchen-garden crops, &c. A "good soaking" may vary from a sprinkling, which may not pass deeper than the surface of dust-dry soil, up to a really "good soaking," according to the

preconceived ideas of the workman; but when watering is done, so that one knows that the proper quantity is given, satisfactory results are sure to follow. The reader will doubtless have noticed the state of the ground in autumn, or whenever it may have been dug up, which has been subjected to the nightly-watering system. When the water used has been a little "hard," ground so treated in summer always turns up like putty. May we just call attention to the anything-but-prudent omission, in forming new gardens, of not having a good supply of soft water laid on to all parts of the garden? With the appliances at command at the present day water can be mechanically applied to every odd corner. Surely money would not be mis-spent on this object.

The reports of sewage companies have proved the great value of irrigation in dry seasons, and almost startled us at the enormous quantities that can be profitably applied to vegetables on light and poor soils, provided a free drainage is insured for the surplus water. Our stand-point, however, has not been to show how much water can be applied, but rather to draw attention to the best means of keeping crops, &c., growing in seasons of drought, be they of long or short duration.—R. P. B. (in *The Gardener*).

### STOVE PLANTS.—No. 3.

**PASSIFLORA CALYCINA.**—Leaves trilobate; flowers bluish purple, produced singly from the axils of the leaves. It is very free in growth and flowering, the stems round, and for the free growth small. It flowers throughout the year.

**P. DECAISNEANA.**—Leaves large, oblong, entire; flowers deep purplish red and white. The largest flower of the genus, produced from the axils of the leaves, generally singly, and sweet-scented, one flower being sufficient to mark its presence in a large house. The stems are four-angled and large. The fruit succeed the flowers, which require artificial impregnation, and are as large as or larger than the Granadilla (*P. quadrangularis*). Flowers in summer.

**P. KERMESINA.**—Leaves trilobate; flowers bright crimson, borne singly and numerous from the axils of the leaves; stems round; growth slender, but free. Flowers from May to autumn on young growths.

**P. MADONNA.**—Leaves oblong, entire; flowers rosy crimson and white, produced in short pendant cymes, sometimes singly. Stems round, and growth rather slender. It flowers from May to late in autumn or winter.

**P. PRINCEPS.**—Leaves trilobate; flowers bright rose, very nearly scarlet, in long pendant cymes of sometimes 2 feet in length, occasionally solitary from the axils of the young growing shoots, but most commonly in cymes from the old as well as the young well-ripened growths and their points. It is seldom out of flower, but blooms most abundantly from September to November, and from March to June. Stems round; growth free; foliage very leathery and persistent. Unquestionably the finest of the *Passifloras*, if not of stove climbers.

**P. QUADRANGULARIS.**—Leaves large, oblong, entire; flowers purplish red and white, sometimes singly, but usually in cymes, from May to late in autumn, being most abundant in August and September. Stems four-angled, and strong. This is the Granadilla; the flowers require to be artificially impregnated.

There are a great many other *Passifloras*, but I will only name two. *P. Buonaparteana*, with red, blue, and white flowers; and *P. Countess Guiglini*, blue, rosy purple, and white flowers. Both are fine.

*Passifloras* will succeed in large pots, but are far better planted out. Two parts turfy loam, two parts leaf soil, one part sandy peat, half a part sand, and the same of pieces of charcoal, well incorporated, will grow them well. Good drainage should be given, and the soil put in firmly. In spring, before or when fresh growth is being made, the surface soil should be removed to the depth of an inch or two, or as the roots permit, not disturbing them, and replacing with fresh compost; and in summer, when the growth is advanced, a top-dressing may be given of rich compost or manure. Water should be supplied in moderate quantity as the plants are starting, increasing it with the growth, having the supply liberal when the plants are in full vegetation and flowering. From October to March they require the soil dry, or a very moderate supply of moisture to keep the wood plump. *P. princeps* is decidedly evergreen, yet needs little water in winter.

The pruning should be done in February, the side shoots being cut back to within an eye of their origin, and those required for extension to be shortened to well-ripened wood. If the stems

are bare of side shoots or means of producing them, the plants may be cut down to the bottom of the rafters or trellis, and to young wood or dormant eyes on the stem. The shoots resulting from the heading-down should be trained up as main shoots, ultimately to form stems, and when they have reached their limit of space they must be stopped. Side shoots springing from the stems should be frequently attended to, thinned-out, and regulated, avoiding crowding, which to a great extent may be prevented by allowing comparatively short shoots, which are most floriferous, to hang down, imparting gracefulness instead of the stiff formality attendant on very close trimming. Shoots of this character, after they have flowered, may be cut-in as in spring, and they will afford a succession of flowering spray. These remarks apply more especially to *P. kermesina*, *P. calycina*, and those having the flowers solitary from the axils of the leaves. If fruit of *P. quadrangularis* or *P. Decaisneana* be wanted, it is well to fertilise the blossoms; this is easily effected by taking off an anther, and applying it to the stigma, seeing that each stigma—there are three—is covered with the pollen. If the atmosphere be moist it is desirable to remove with a pair of sharp-pointed scissors (and this must be done carefully, not injuring the flower stem) the whole of the calyx, corolla, and crown prior to fertilisation; but if it is not so, and the temperature is brisk, there is no necessity for such a precaution. The operation is best done before mid-day. *P. edulis*, which is probably the freest fruiting of all, sets its fruit freely, often without artificial impregnation; but it is well to resort to artificial setting.

Propagation is effected by cuttings of the young wood during spring or summer in sand over sandy peat and loam, in bottom heat, and covered with a close frame or bell-glass.

**STEPHANOTIS FLORIBUNDA.**—Evergreen twiner, with deep green leathery leaves of oblong form; flowers in trusses, tube-shaped, white, and very fragrant. It flowers in May and onward to July, and occasionally to September, inclusive, but most of the flowers are produced in May and June. Madagascar.

For roof-covering, or extensive covering of any kind, it requires a border of moderate extent and depth, and to have good drainage. For soil use fibrous light loam two parts, sandy peat two parts, leaf soil one part, half a part of silver sand, and half a part charcoal, the whole well mixed, made fine, but not sifted, and put together rather firm whilst dry rather than wet. Nine square feet of border 18 inches to 2 feet deep will support a large plant.

Water should be given very moderately in winter—sufficient only to keep the stems and leaves from shrivelling need be supplied. The leaves when falling should be of a yellow colour; do not seek, by allowing the roots to become dry, to cause limpness in the leaves and make these fall. When growth commences water moderately, and when the plant is in free growth and flowering, and until the growth is complete, liberal supplies should be afforded. The border, when growth is commencing, should have the surface soil removed down to the roots, and be replaced with fresh. The plants, when flowering freely, should have weak applications of liquid manure, also when making fresh growth if the root-action is perfect. From the time growth commences until it is complete thorough syringings twice a day are desirable, along with a moist atmosphere. This is one of the best means I know of keeping down mealy bug, to which this plant is subject.

Pruning should be performed in spring before growth commences, cutting out the long and bare old shoots, and leaving the young ones not nearer than 3 inches apart. No benefit results from overcrowding. The flowers are produced on shoots of the current year, as well as on shoots that were formed on the growths of the previous year. Some prune rather severely in spring, and depend for flowers on the resulting growth; others prune but moderately in spring, and go over the plants again in June after flowering, cutting out on each occasion any bare shoots, or shortening such as are long and bare, so as to encourage the production of fresh shoots nearer the base, and the shoots formed in consequence of the June pruning sometimes afford a few flowers late in summer, but most plentifully in the May following. The latter mode of pruning I consider the better, though there is no objection to the former, the wood being well ripened. The principal point to be aimed at is keeping up a sufficiency of young wood, well ripened by full exposure to light and air.—G. ARBEY.

**READ'S SCARLET-FLESHED MELON.**—I was very much surprised to read in the "Doings," that this Melon is the worst

setter, and after the fruit has swelled as large as a duck's egg it would drop off. I find the very reverse. I have a three-light frame, not very large, on an ordinary dung hotbed filled with this variety. There are more than twenty fruits swelled-off. More than half are larger than the largest Orange, with several much larger than these. I think that it is, root and branch, flower and fruit, all that can possibly be desired of a Melon to its present stage of growth. I cannot say more at present, but of the final result I shall be most happy to inform the readers of the Journal. Perhaps some others will tell us their experience of this Melon.—JAMES ALLAN, *Gardener, Ashurst Park.*

### NOTES AND GLEANINGS.

At the SPECIAL GENERAL MEETING of the ROYAL HORTICULTURAL SOCIETY on the 11th inst., called for the purpose of authorising the closing of the Society's gardens, except on payment, in the event of an evening fête being given, Mr. Bonamy Dobree presided. The attendance of Fellows, however, was so scanty, that beyond the Secretary's stating the objects of the Council in calling the meeting, no steps were taken in the matter.

— THE heights of the fine AZALEAS shown by Mr. Morse, gardener to Proctor Baker, Esq., of Bristol, at the Bath and West of England Show last week, were *Etoile de Gand*, 7 feet; *Extrane*, 6 feet 6 inches; *Gledanesii*, 8 feet; *Lateritia superba*, 7 feet; *Criterion*, 8 feet.

— THE SHOW of the BATH AND WEST OF ENGLAND SOCIETY will be held next year at Croydon. The Steward of Horticulture, who is the Hon. and Rev. J. T. Boscawen, intends that the horticultural department shall be specially devoted to Orchids and Ferns. We hope that he will receive every assistance in making this praiseworthy attempt a perfect success.

— WE are pleased to see that MESSRS. JAMES VEITCH AND SONS have this year repeated the prizes they offered last year, and that they have arranged with the Council of the Royal Horticultural Society for the competition to be held at the gardens, South Kensington, on the 15th of July next. After the result of last year's experiment we are not surprised that Messrs. Veitch should be encouraged to repeat it. The exhibitions were most creditable to all concerned, and we commend the public spirit of these gentlemen in the advancement of fruit culture to the consideration of fruit-growers, and hope that there will be an energetic response to their very liberal invitation.

— In "Chambers's Edinburgh Journal," in notes on "Transmutation of Species," the following experiment was recorded by Mr. Herbert:—I raised from the natural seed of one umbel of a highly-manured red Cowslip a Primrose, a Cowslip, Oxlips of the usual and other colours, a black Polyanthus, a Hose-in-Hose Cowslip, and a natural Primrose bearing its flower on a Polyanthus stalk. From the seed of that very Hose-in-Hose Cowslip I have since raised a Hose-in-Hose Primrose.

— WE are informed by M. Jean Sisley that the Lyons section of the INTERNATIONAL CONGRESS OF ROSARIANS, seeing the difficulty of making an exhibition this year at Geneva, have postponed it till next year, and that on the 3rd, 4th, and 5th of July next an Exhibition will be held at Lyons.

### NOTES ON VILLA AND SUBURBAN GARDENING.

*Window Flowers.*—When the windows and balconies are filled with a selection of plants according to taste, and these are potted into moderately large pots sufficient to last them through the growing season, they will require little other attention besides watering, which must be very regularly and constantly done. Plants in this situation, from the position they occupy, are extremely liable to suffer from drought if there is the least neglect in administering their supply of water. This applies equally to all kinds of plants cultivated in such situations. In order to protect the plants from injury in consequence of the powerful rays of the sun striking directly on the sides of the pots, often very thin, and forming a mere shell around the roots, it is advantageous to set the pots containing the plants within others just large enough to contain them. The double sides of the pots, together with the small open cavity all round between the two, prevent the evil to a very great extent; and it may be still further prevented by choosing the exterior pot still larger, and filling the interval between the two with moss, which is to be

kept damped. If this plan is objected to it would, perhaps, be possible to form a bed of moss on the window-ledge in which the pots could be plunged, the moss being kept damp. A very pretty selection for a window consists of a scarlet *Pelargonium*, a yellow shrubby *Calceolaria*, and one of the deep-coloured small blue *Lobelias*; a globe *Fuchsia* is also a beautiful plant for the situation. It is a very prevailing error to set such plants too thickly; they should never touch.

The season is now arrived for those who have a greenhouse, frame, or a convenient pit for growing a few select plants, to take particular notice, while they are in full bloom, of those which are most suitable for such purposes, an opportunity of inspecting them being furnished at the various exhibitions, or of selecting from the accounts given from various localities through the columns of this Journal. Select only those that possess the best properties. *Rhododendrons*, *Kalmias*, *Roses*, *Pinks*, *Picotees*, *Carnations*, &c., may also be selected for the flower garden. *Fuchsias*, *Pelargoniums*, *Cinerarias*, &c., should be chosen while in bloom, or from memoranda duly taken of really worthy varieties, and nothing else. Some of the early-flowering *Pelargoniums* should now be headed-down, and cuttings of such as are required for young stock at once put in. These will readily strike on any well-sweetened pulverised ground quite exposed, without either bottom heat or the assistance of glass. It is an improvement to surface the soil as they are bedded-out, and previous to watering, with sharp clean sand and charcoal dust. *Pinks* should now be piped, and the young *Wallflowers* already struck should be at once pnt out. Those who have *Tulips* should now watch their ripening, and take the bulbs up carefully in due season. See that *Dahlias* are staked properly if not already done, and keep them tied, all superfluous shoots being taken off previous to their robbing the main plant.

Pay particular attention to the *Grape Vine* in stopping, lashing-in, and pulling-out the side shoots. All other trained fruit trees should come in at this season for due attention as regards thinning and training, and keeping them clear of vermin by frequent washings.

Look well to the *fruit garden*. The Gooseberry caterpillar is troublesome in some districts at this season, and causes great destruction and disappointment, not only in the loss of the foliage and fruit to a serious extent, but also in producing weakness and immaturity of bud for the following season. By laying a piece of cloth or canvas under the trees, and shaking them, a large quantity may be taken and thrown into a bucket of water for security, and those that will not shake off should be hand-picked and destroyed at once. Currant, Cherry, Pear, Nectarine, or indeed any other kind of trees that may be infested with the green fly, may be cleaned with good washings with soot water clear, or soapsuds, both capital things for routing-out vermin, and good fertilisers. Much benefit may also be derived by those who have a few Apple trees infested with blight from washing them with the above materials, and cauing all the smother with smoke from charring refuse they possibly can at this season. Currant and Gooseberry trees may be greatly assisted by thinning and stopping back all superfluous young shoots; besides, the size and other qualities of the fruit are much improved. The young shoots of Raspberries, or superfluous suckers, should be thinned, and nothing more allowed to remain than is actually required for fruit-bearing and filling-up spaces another year. Where it can be done all fruit trees should now be mulched. Those who possess a Fig tree should pinch out the points of the shoots when they have attained the length of four or five joints if they wish for short-jointedness and fruitfulness in succeeding years, and they should also curve all strong-growing shoots.

*Flower Borders.*—Much benefit may be derived from thinning the shoots of many plants at this season, staking, tying, thinning buds, and the timely application of water and liquid manure to such subjects as *Pinks*, *Carnations*, and *Dahlias*. The bulbs of the *Tulip* may be much improved by an application or two of liquid manure as soon as they have dou blossoming. Bulbs of *Hyacinths* should be taken up and properly stored.

In the *kitchen garden* assistance should now be given to the growing crops of Onions, Parsnips, Carrots, &c., by frequent surface-stirring, never allowing weeds to be seen; otherwise they are sure to be robbed of part of their produce, both in quality and quantity. Apply food in the way of liquid manure to Scarlet Runners, Cabbages, and Beans. This may be effected by saving the soapsuds and other slops, and diluting according to the strength and luxuriance of the crops.

When rain occurs, which is much needed, the opportunity of planting-out the various Broccolies, Kales, Coleworts, Savoy, &c., should be taken without loss of time. Due attention must be given to hoeing and scarifying the soil about them, and making-up vacancies that may occur among them. The early Celery should get good attention. Clear any superfluous side shoots or suckers, and frequently stir the surface and apply liquid manure. Good sowings of Coleworts should now be made for filling all vacant spots as they become clear, for a supply of young Cabbages through autumn, winter, and spring. The smallest kind of Cabbages are the best to be sown for this

purpose. One foot apart each way when planted out is quite sufficient room for the plants. It is astonishing what a quantity of useful food may thus be produced. Besides, the pleasure of observing a well-cropped garden is very great compared with a state of neglectful barrenness. Nothing is gained by the latter.

**Routine Operations.**—Attend to mowing and rolling the lawn, to weeding, sweeping, and rolling walks, and to hoeing, raking, and stirring the surface of the ground. Continue to peg-down all plants that require it, support and regulate the shoots of climbers, stake and tie-up all tall-growing plants, destroy earwigs and all kinds of destructive insects.—W. KEANE.

## DOINGS OF THE LAST AND PRESENT WEEKS.

### KITCHEN GARDEN.

FREQUENT allusion has been made to *watering* in recent numbers. We have not the benefit of a supply laid on either in the flower or kitchen garden; but in such a season as this, where there is an arrangement made to fix a gutta percha hose so that the water can be applied easily to beds or borders, the work can be got through, and but little inconvenience be caused by the extra watering. On the other hand, where water has to be dragged in carts or carried by hand a considerable distance, either the ordinary work must fall behind or the plants and vegetables must suffer. Depend upon it, there is no more important matter connected with the laying-out of new gardens than that of securing an abundant supply of good water.

But for the deep working of the kitchen-garden quarters, and a goodly dressing of manure, vegetables would have been very poor in quality. Peas are podding very well, but the pods are small, and the quality very indifferent. Early Cauliflowers that received two good waterings are excellent. The autumn-sown seeds have given a supply of two sets of plants. The earliest that were put out under hand-lights are now being cut; other plants pricked-out in boxes and planted in March will succeed them. The next batch are from seed sown in a frame over a hotbed. Early Cabbages are also pretty good; the farmers say that the market is overstocked with them. Many wagonloads were sent from this neighbourhood last year for the markets in the midland counties; this season none are required.

Planted successional plants of Celery, and attended to the earliest planted; though not quite ready for earthing-up, it requires regular supplies of water. This, though a ditch plant in its normal state, must not be watered until the soil becomes sour.

### FRUIT AND FORCING HOUSES.

**Pinerias.**—In very large gardens where there are houses devoted to each class of plants, pineries for Pine plants, Orchid houses and vineries devoted to those subjects and nothing else, the routine of gardening work is very much simplified. On the other hand, where Pine houses have to accommodate Orange trees, Vines in pots, Vines planted out and bearing fruit, fine-foliated and flowering plants, a little scheming is necessary in order that everything may succeed tolerably well. When stove plants that may be infested with bug and scale are to be introduced, they must be thoroughly cleansed from all such pests, and a strict watch maintained so that it may be washed off immediately. There are certain plants and fruit trees that may be grown in the same house with Pines. Fig trees, Vines, and Orange trees will do as well there as if a house were devoted to their culture; but they must be cultivated in pots, so that they may be removed to a cool house during the winter months; or it may be so arranged that the Pines can be removed to another house where their special requirements may be studied, while the house is ventilated freely for the purpose of resting Vines, &c.

Early-potted suckers that have filled the pots with roots should now be potted into their fruiting-pots. Plunge the pots in a bottom heat of 90° or 95°; shut the house up early in the afternoon to utilise all the available sun heat. The night temperature may be kept at 75°. The object of this is to grow the plants into a fruiting size by September, so that they may be ready to start into fruit early the following season, after being duly rested. Managed in this way Pines will be produced in little more than twelve months from the time the suckers are put in. Large pots must not be used, as these have a tendency to cause the plants to start into growth instead of into fruit. Ten-inch pots for Queens, and 12-inch pots for Smooth-leaved Cayennes and Charlotte Rothschilds, are sufficiently large. Plants with fruit that is now ripe and ripening should be removed to a moderately cool airy house, or the ripe fruit may be cut and hung up in the fruit-room until it is required.

**Melon and Cucumber Houses.**—We are clearing-out the old plants from which the Melons have been cut. Some gardeners obtain a second and even a third crop from the same plants, but we have never seen them in such vigorous health after the first crop was cut as to insure a crop that would be at all creditable to the cultivator. A better way is to have a second series of vigorous young plants ready to go out in the border as soon as the old exhausted soil can be removed and replaced with fresh

compost. The woodwork and glass should also be well washed to destroy red spider.

Every ten days at least the Cucumber plants require to have their shoots thinned-out, those that are allowed to remain being stopped and tied to the trelliswork. Early this month we had a few warm nights, and the fires were discontinued; colder nights followed, so that the thermometer fell below 60°. The Cucumbers produced were of inferior quality. They were good enough for use in the house, but being required for exhibition it was necessary to maintain a higher night temperature by means of fire heat, and this was rendered the more necessary, as on the morning of the 13th, Saturday, the frost crisped under the feet on the lawn, the thermometer standing at 30.5° Fahr, the barometer steadily rising, wind north by east, and no rain. Plenty of atmospheric moisture, and a night temperature of 75°, with substantial material for the roots to travel into, will produce Cucumbers of the best quality, both as regards appearance and flavour.

**Orchard House.**—Getting ready material to surface-dress the fruit trees in pots. Horse droppings, cow manure, and leam mixed in equal proportions and thrown into a heap to ferment are an excellent stimulant. It must not be allowed to become overheated, otherwise the nourishing properties will be thrown off. It will probably be necessary to turn the material over every day, and in ten days or a fortnight it will be ready for use. We use it when the heat has very much subsided, but before it has entirely gone out of it. A handful or two of this dressing will be spread over the surface of each pot and pressed down firmly with the fingers. The water should be applied through a spreader. After this it will also be necessary to apply fresh dressings every ten days. It is not necessary to apply manure water to the trees; indeed, this is more often injurious than otherwise.

The Strawberry pots have been nearly all cleared-out of the house, and glad we were to get rid of them. The quantity of water required by them is something enormous. Some persons place saucers under the Strawberry pots, which retain the water round the base of the pot; but experience has taught us that the saving of labour is gained at the expense of flavour in the fruit. Mildew has been more than usually abundant on the Strawberries this year. *La Constante*, British Queen, and President have not been much affected.

### GREENHOUSE.

Hardwooded plants which have gone out of flower have been removed out of doors, but in doing this it is necessary to exercise care, so that they may not be exposed to too much sunshine after being shaded in the greenhouse; and even though the ventilators may be open night and day, the plants are in a much higher mean temperature than they will be when placed out of doors. Shelter from the east and north is very desirable, and a tile or slate placed upright against the side of the pot will prevent the sun from burning the roots. The stage Pelargoniums that flowered early are also placed out of doors and watered sparingly; in a week or two the wood will be ripened, when the plants may be cut-over.

Removed *Cyclamens* into a pit where the lights can be removed entirely. The plants are now at rest, and require very little water, but the roots must not be quite dried-up. The leaves are also liable to be attacked by red spider, but this can be dislodged by syringing. By sowing Cyclamen seeds in January and growing the plants on in heat all through the ensuing summer, nice flowering plants are obtained which will produce about two dozen flowers each in the winter. This season seeds were sown in a hotbed in March, and they vegetated freely. The young plants have been potted-off singly into small sixties, and the pots plunged in a cold frame. This beautiful flower is easily managed. The plants are better in cold frames during the summer months than in a greenhouse, where the pots are far removed from the glass. If they are removed to a warm greenhouse about the end of September the flowers will soon be thrown-up, and a succession will be produced until March.—J. DOUGLAS.

## PROVINCIAL HORTICULTURAL EXHIBITIONS.

[SECRETARIES will oblige us by informing us of the dates on which exhibitions are to be held. Although we cannot report them fully, we shall readily note anything especially excellent, and we wish for information on such specialities to be sent to us.]

	JUNE.	JULY.
Brockham (Rose).....	23	Wisbech..... 1
Stamford..... 23 and 24		Leicester and Leicestershire 1 and 2
Nottingham..... 24		Cirencester (Roses)..... 2
R.H.S. of Ireland..... 24		Bristol, Clifton, and W. of England 2
Cambridgeshire..... 25		Bury St. Edmunds..... 2
Thetford..... 25		Nottinghamshire (Newark), South 2
Ipawich and E. of England 25 and 26		Godmanchester..... 2
Kingston and Surbiton..... 25 and 26		Tewkesbury (Roses)..... 2
Boston..... 30 and July 1		Teddington..... 2
Stratford..... 30, and July 1 and 2		Spalding..... 2 and 3

JULY.		JULY.	
Devon and Exeter (Roses).....	3	Oundle .....	15
Tanbridge Wells.....	3	Brighton and Sussex.....	15 and 16
Southgate.....	4	Kaling, Acton, and Hanwell.....	16
Winterton.....	7	Gloucester and Cheltenham.....	16
Midland Counties (Birmingham)		Woolbridge.....	16
7, 8, 9, and 10		Graze on Sands.....	17
Wiltshire.....	7 and 8	Bury (Lancashire).....	17 and 18
Royal Caledonian Hort. Soc. ....	8	Cleckheaton.....	18
Kelso.....	8	Bramley.....	29 and 31
Hereford (W. of England Rose) ..	8	Erewash Valley.....	21
Maidstone.....	8	Elford.....	22
Chelmsford.....	8	Cambridgeshire.....	23
Bishop Stortford.....	8 and 9	Gratham.....	23 and 24
Peterborough.....	8 and 9	Tong and Dudley Hill.....	25
Manchester.....	8, 9, and 10	Hales Owen and Hagley.....	28
Hertford.....	9	Buckingham.....	28
Darlington (?).....	10	Tewkesbury.....	28, 29, and 30
Chipping Norton.....	10	Errol.....	29
Altrincham and Bowdon.....	10 and 11	Castle Donington (Derby).....	29
Kilnara, Strone, and Blamore.....	11	Royal Oxfordshire.....	30
Loughborough.....	15	Woolton.....	30
Derby.....	15		

## TO CORRESPONDENTS.

\* \* It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**BOOKS (Tyro).**—The latest edition with appendix of Johnson's "Cottage Gardener's Dictionary" is that of 1863. Its price is 6s. 6d., or post free from our office 7s. 2d. (*Polite*). The above-named Dictionary may suit you. (*C. R. R.*).—The book you mention is published by Messrs. Groombridge.

**LATE PEARS FOR S.W. WALL (F. C.).**—Duchesse d'Angoulême, Bauré de Rance, and Easter Beurré.

**FERNS (J. G. Lerwick).**—The two specimens seem to be of the same species, *Polypodium alpestre*, Alpine Polypody. They were smashed up along with the other leaves by the post-office punches. The malformed Daisy is curious but not attractive.

**GLOXINIA SEEDLING (Inquirer).**—The flowers are large. There are others of a similar colour.

**LOIS WEEBON WHEAT CULTURE (T. Gee).**—Particulars are in a pamphlet published by Mr. Ridgway, Piccadilly, London, entitled "A Word in Season."

**FOXGLOVE FLOWER (Ramatho).**—The white Foxglove flower is an instance, not uncommon, of a combination of corollas so as to form one monster. It is like the combination of several *Asparagus* stems, and the same term might be applied—fasciated.

**CYSTOPTERIS DICKIEANA (Inquirer).**—What you mistake for disease are the spores, called spores by botanists.

**MYRTLE NOT FLOWERING (Knutsford).**—The Myrtle should be kept in a light, airy position in the greenhouse, be sprinkled overhead morning and evening, and be well supplied with water until the growth is complete, then discontinue watering overhead, and water only to keep the soil moist. Do not give water in winter before the soil becomes dry, but before the foliage becomes limp afford enough to moisten the soil through. The plant can hardly have too light and airy a position so as to thoroughly ripen the wood, upon which depends the flowering. Repot at once if needful, giving only a moderate shift, and using a compost of sandy fibrous loam two parts, one part each sandy peat and leaf soil, and a sixth of silver sand, with good drainage. You may obtain Gold-laced Polyanthus seed through any seedman advertising in our Journal.

**PROPAGATING BEDDING GERANIUMS (C. S.).**—It is quite early enough to commence propagating these in August, and propagation may be continued throughout that month up to the beginning of September, commencing with the weaker kinds and ending with the stronger-growing sorts. We should have at least four cuttings in a 4½-inch pot—in fact six, and winter them in the cutting-pots, as they take up much less room, potting them in spring. We prefer boxes made of three-quarter-inch deal, about 2 feet long, 12 inches wide, and 3 inches deep, external measurement, which allows of our wintering in a little room a number of plants in each box, putting about a hundred into each. Some of the best bedding Pelargoniums are Albright Beauty, deep rose; Bayard, crimson; Crimson King, dark-shaded crimson; Diadem, bright scarlet; Dr. Tait, crimson; Jean Sisley, scarlet; Master Christine, rosy pink; R. Evans, rose; Mrs. Upton, pink; Vesuvius scarlet; The Bride, white; Warrior, scarlet; and White Wonder, white. *Golden-variegated*: Alhambra, Flambeau, Lady Callum, Sir Robert Napier, and Prince of Wales. *Gold and Bronze*: Constantine, Marshal MacMahon, Rev. C. P. Peach. *Silver-variegated*: Mrs. John Clutton, Prince Silverwings. *Golden-leaved and Gold-edged*: Crimson Banner, Golden Banner, Pillar of Gold. *Silver-edged*: Bright Star, Miss Kingsbury, Princess Alexandra. *Tray-leaved*: L'Éléante, Silver Gem.

**CALCEOLARIAS A SECOND YEAR (Newport Pagnell).**—Instead of seeking by cuttings to preserve the old plants we should advise you to save the seeds, placing the plants in a light airy position until the seed is ripe. Take off the capsules as they ripen, and sow the seed in July and up to August. The old plants are difficult to keep until the second year, and neither these nor plants continued by cuttings grow satisfactorily; but you may take cuttings of the healthy root-growths, insert them singly in sandy soil, and place them in a

shady spot under a hand-light, keeping moist and shaded from sun. When the roots show at the sides of the pots shift the plants into larger pots, and grow them in a cold frame, shifting as the pots become full of roots, and moving to a cool airy house safe from frost in October or November. Seedlings are far preferable to plants from cuttings.

**HOLLYHOCK BLIGHT (F. Manning).**—The leaf sent is attacked by that new fungus scourge we fully described and depicted in our number of May 28th. Pull up every plant affected and burn it at once. No remedy is known, and the spores will spread the infection if allowed to ripen.

**CYANOPHYLLUM MAGNIFICUM CULTURE (Omega).**—You give us no particulars of your treatment; we are not able, therefore, to point out what may have caused the plant to grow so indifferently. We give a few hints for its culture. To do well it requires a brisk heat of 65° to 70° at night, and 75° by day on dull days, and 81° to 85° or 90° with sun and a moderate amount of air. The atmosphere requires to be kept moist by frequently sprinkling the paths, walks, and other surfaces three or four times a day, leaving a little air on at night to prevent moisture condensing and dripping on the leaves, which must never be sprinkled. The roots are not healthy, otherwise the growths would be more free. Turn the plant out of the pot, remove all the soil coming away readily from amongst the roots, and repot in a size that will hold them comfortably, and when the plant is showing roots at the sides of the pot, and before they become matted, shift into a size larger; and the next shift, when the roots are showing at the sides of the pot, should be a good one. Moderate watering only is required until the root action and growth are free, and then the watering should be liberal. Equal parts of sandy peat, turfy loam, and leaf soil, with one-sixth of silver sand, and a similar proportion of pieces of charcoal, the whole well mixed and chopped up, but not sifted, with good drainage, will grow it well.

**PROPAGATING PIT ARRANGEMENTS (G. D. Lyon).**—We have a bed along the front of the house 3 feet wide, and another of the same width at the back of the house, which will allow of a 2-feet pathway up the centre. The front border we should use for Cucumbers or Melons, and heat with two rows of 3-inch pipes, having openings in the wall of the bed next the path, and also in the wall of the other bed. The openings need not be large—say 9 inches by a foot long, and should have sliding doors. By means of these shutters you can regulate the bottom heat, and utilise any excess of heat by admitting it to the air of the house. The pipes we should have in a chamber, which need not be more than a foot deep, placing over them slates, having a foot of space for soil over them. The back may be formed in the same way; and instead of so deep a space for plunging material, 6 or 9 inches deep over the slates will be sufficient. Two pipes will not be sufficient for top heat, though with the heat from the chambers of the beds you might manage with two pipes; but we should prefer four 3-inch, the flows at the sides, and the returns along the pathway, which will give you sufficient heat without warming the piping to a high temperature. If you were to have the back border as deep as the front for soil, you could have Cucumbers in it trained to the back wall on a trellis, or Tomatoes and Melons in front, on a trellis about 12 inches from the glass, not taking them nearer the top than 2 feet, so as to admit light to the plants on the back wall. You might use the front border in winter for Cucumbers, the back one for propagating and forcing, and when done with for that purpose plant Cucumbers, and when the Cucumbers on the front were going off you could replace them with Melons.

**BINDING FOR ROSE-BUDDING (T. D. L.).**—For binding the buds of Roses the cotton twist as used by tallow-chandlers is preferable to matting. It should be of the best. Japan flax is also good.

**FISH FOR POND AND WATER LILIES (C. L.).**—We do not think fish would live in your pond, the water of which is very chalky. Water Lilies would probably succeed if the pond has mud at the bottom. The Nuphar lutea, as also the Nymphaea alba, would most likely succeed. We have not had the experience that prompts our giving a decided answer to your queries, and should be glad if some of our correspondents would state their experience of fish in a pond supplied with water containing chalk, also Water Lilies.

**RAIN AND ROCKWORK (Norton).**—You need not be surprised that your imitation does not satisfy you. Rockwork is most difficult to construct so as to look natural. A poet and man of taste justly wrote a century since—"I went to see a fine piece of ruins built at a great expense, which, the day after I saw it, tumbled down for nothing. It must have been much improved by this fortunate incident. It is hardly possible to put stones together with that air of wild and magnificent disorder which they are sure to acquire by falling of their own accord." Mr. Pulham has recently very successfully arranged some rockwork at the Battersea Park.

**INSECTS GNAWING BASE OF BUDS OF APPLE TREES (J. H. E.).**—As you have sent no specimen of the insect doing this mischief, we can only conjecture that it is the young caterpillar of a small moth, most probably Tortrix ocellana, which gnaws into the stems of the buds and destroys them. The diseased buds should be carefully picked off below the space apparently gnawed, so as to secure the grub which has burrowed downwards, and burnt.

—I. O. W.

**ANEMONES FROM THE SOUTH OF FRANCE (Anemone, Co. Dublin).**—We should not take them up, but leave them in the ground if it is light and well drained. Loosen the surface in September or early in October, and mulch lightly with leaf soil.

**CUCUMBERS IN FRAMES (F. J.).**—When the plants are established the ventilation will require to be regulated by the state of the weather; but as you are absent from home daily from 9 A.M. to 7 P.M., you will have to give air according to your prognostication of the fineness or dullness of the day at a little before 9 A.M. If likely to be a dull day you may tilt the lights a couple of inches, or push them down to that extent; if likely to be a cloudy day but with clear sunny intervals, you may leave an opening at back of 4 to 6 inches according to the prevalence of cloud, and if clear and hot you think would not be safe without leaving 9 inches of air on. In your case we think it would be best to push down the lights, but you may tilt them if you make them secure against wind. The lights should not be raised in front. In very bright and hot weather you will need to water the plants every second or third day, whilst in partially clouded and clear weather twice a week will be sufficient. It is well not to overwater, but the soil ought to be kept moist, otherwise the growth will not be free.

**HOSE PIPING (Idem).**—We have no recollection of canvas-hose piping for watering purposes, and do not know of any cheaper or better than india-rubber. Leather hose was some time ago advertised, perhaps it was that to which you allude. We do not know where it may be obtained. Manufacturers of these articles should advertise.

**ALOE IN SUMMER (T.).**—Keep the soil moist as for other greenhouse plants

Sandy loam, peat, and limy rubbish in equal proportions will best suit it, with a good drainage of broken bricks. The plant you enclose is the White Beet. The stalks of the leaves may be boiled as Sea-kale, and their upper parts as Spinach.

**GRAPES IN TWO GREENHOUSES (H. H.).**—That in which the Grapes are the most forward must have been kept warmer than the other. There are many double Geraniums now, and we can give no opinion without seeing a truss of the flowers.

**MR. D. T. FISH (F. H.).**—We have read the correspondence, and have before us the Charter of the Society. There can be no doubt that the Council had no power to confer upon Mr. Fish, or upon anyone, the privileges of a Fellow without payment; and we regret extremely that Mr. Fish should have been led to believe that he was a forty-guinea Life Fellow when he was not. The only honour the Council can confer without payment is an Honorary Fellowship, which gives all privileges except that of voting at public meetings of the Society.

**VARIEGATED CURRANT (F. T.).**—The leaves are very striking, and grouped with other shrubs are ornamental. It is the *Ribes rubrum* fol. luteo of Dahamel. It deserves to be more cultivated in our shrubberies.

**GARDENERS' BENEFIT SOCIETY (W. J.).**—You would obtain all the information you require on applying to The Secretary, The Retreat, Redland, Bristol.

**BROWN BEURRE PEAR CRACKING (J. E.).**—In our own garden several varieties of Pears crack in a young state. Fungoid growth on the skin has caused it, and we found that after cold east winds the fruit on the exposed side was cracked, while that on the other side was not much injured. In the case of your tree we would not hesitate to try root-pruning if you are sure that cold winds are not the cause. Some good tarry loam placed amongst the roots would be necessary. This is best done in November.

**LASTREA FILIX-MAS (A Cabbage).**—It is a British plant. Some *Liliums* require greenhouse culture, and some are hardy.

**NAMES OF PLANTS (A Reader).**—*Eriophorum angustifolium*, Narrow-leaved Cotton Grass. (W. D. H.).—It is *Limnæthes Douglasii*, and has no pretension to the name of "Egyptian Lily." It was found by Mr. Douglas in California.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### HYBRID BIRDS.

I AM much pleased to see "BOSTONIAN'S" reply respecting hybrids between the Golden Pheasant cock and the common fowl. If, however, he had quoted the *whole* of the paragraph of May 28th it would have stood thus:—"Now the fact is this, I never knew an instance among the many attempts made in which the Golden Pheasant cock bred with any description of domestic poultry, as all such efforts have signally failed; for in no case has even a single egg proved to be fertilised." Of course I could only, as plainly stated, speak within the bounds of my own knowledge, and I certainly hail with unfeigned pleasure his announcement that success has resulted in any instance previously unknown to me. I at once admit I am quite unacquainted with the variety of "fowls" he describes by the name of "Ajables," whilst their special characters, as detailed—"They resembled most closely the barndoor fowl, but somewhat smaller, were adorned with a goodly-sized topping, narrow tail, head somewhat erect, close-feathered, long in limb, and partly booted"—does not correspond with the traits of any variety of fowls known to me. If, therefore, either through the Journal or by private letter "BOSTONIAN" will kindly inform me where any of these truly unique hybrids can be seen, I shall indeed esteem it a great favour.—EDWARD HEWITT.

### SMALL COOPS FOR POULTRY.

HAVING frequently heard persons say they would like to keep poultry if they had the room, having the idea that fowls must have a large range to be of profit, I will give the result of my experience with five different coops of fowls for two months—March and April.

No. 1. One cock and five Dominique-Leghorn pullets. Received 160 eggs; average, 32 to each hen.

No. 2. One cock and two Black Hamburg pullets. Received 88 eggs; average, 44.

No. 3. One cock and four Golden-spangled Hamburg pullets. Received 160 eggs; average, 40.

No. 4. One cock and five Silver-spangled Hamburg hens, four years old. Received 165 eggs; average 33.

No. 5. One cock and ten Grade Hamburg pullets. Received 370 eggs; average 37.

Nos. 1, 2, 3, and 4 have been confined the four months past in coops made of lath, 13 feet long, 4 feet wide, and 2 feet high.

No. 5, Grades, have the range of a yard 21 by 40 feet.

My fowls are in good health, and the eggs hatch well; 13 chicks from 15 eggs.—CHARLES SELSER.—(*American Fanciers' Journal*).

**WOOD PIGEON AND DOVECOTE PIGEON PAIRED.**—As a Pigeon fancier I feel interested in the question whether the Ring Dove will pair with the dove-cote Pigeon. I have looked up the word "scar" in Webster and Worcester's English dictionary, and find that one of the meanings is "the detached protrusion of a

rock." With "WILTSHIRE RECTOR" I should like to know whether these two birds will really breed together.—ALMOND TUMBLER.

## THE POULTRY-KEEPER.—No. 7. CREVE-CŒURS.

### THE CREVE-CŒUR COCK.

#### GENERAL PROPORTIONS AND CHARACTERISTICS.

**Body.**—Large, squarely built, compact, well set on strong feet (see fig. 15). The back nearly horizontal, being very little



Fig. 15.—Crève-Cœur Cock.

sloping behind. Breast, thighs, legs, and wings well developed; limbs compact; head very strong, crested, whiskered, cravated; comb double and in form of horns; wattle long and pendant; ears short and hidden. Four toes on each foot; feathers of the abdomen long and thick, flight feathers of the wing of the ordinary length, sickles and large sickles very long; plumage all black in the best birds; black, yellow, and white in the commoner ones.

**Carriage.**—Sedate and dignified.

#### WEIGHT, SIZE, AND CHARACTERISTICS.

**Weight.**—When full grown from 7½ lbs. to 8½ lbs.

**Flesh.**—Very abundant.

**Bones.**—Very light, less than one-eighth of the bird's entire weight.

**Stature.**—From the upper part of the head to under the feet in repose 17½ inches. In upright position from 19½ inches to 21½ inches, according as he raises himself, and is taller or shorter on the sole of the foot and the leg; from the back under the feet from 12½ inches to 13½ inches.

**Body.**—Larger than that of the Honan. Back large. Breast very wide, very large, and straight. The thigh and the leg coarse, short, and almost hidden amongst the feathers, so as hardly to be distinguished from the body of the bird when in a state of repose.



Fig. 16.—Combs of Crève-Cœur Cocks.

**Head.**—Length, 3½ inches.

**Crest.**—Very thick, very large, heavy, with long taper feathers

falling all round the head in the best specimens; feathers at the top growing upright, and some falling in front.

*Whiskers*.—Very thick.

*Cravat*.—Long, thick, and coming down below the wattles.

*Comb* (fig. 16).—Variable, but being always formed of two horns, sometimes parallel, straight, fleshy, sometimes united at their base, slightly indented, pointed and diverging at the top; sometimes approaching this last arrangement, but having some branchlets on their inner sides like the horns of a young stag.

*Size of Comb*.—Varying in length from 2 inches to 3½ inches.

*Ears*.—Whitish, of the ordinary size, almost hid under the feathers of the whiskers and crest.

*Wattles*.—Hanging long and fleshy, from 2½ inches to 4 inches.

*Nostrils*.—Open, large, with projecting bumps around them.

*Iris of Eye*.—Darkish red.

*Pupil of Eye*.—Black.

*Physiognomy of the Head*.—It is something like that of the Houdan. The eyes almost entirely disappear under the feathers of the crest. The comb, in the form of horns, gives to the face of the Crève-Cœur a Satanic appearance.

*Foot*.—Sole of foot strong, and varying in length from 2½ to 3½ inches. The toes, four in number, are stronger and larger than those of the Houdan.

*Colour of Foot*.—Black, or blue darkly silvered.

*Weight of Chicken*.—The Crève-Cœur is even more precocious than the Houdan, and its flesh more abundant, and at the same age surpasses that of the last-named.

#### THE PLUMAGE.

Entirely black, shining, and iridescent; blue and green upon the neck-hackle, in the long pointed feathers of the back of the wings, and of the feathers which cover the base of the tail, and the large and small sickles. The rest is of a dull black, except the feathers on the abdomen, which are of a brownish black. The crest is generally white to the hind feathers after the third or fourth moult. Many birds have the neck-hackle, the long pointed feathers of the loins, and the feathers of the wing-coverts of a straw colour, which does not indicate their not being of pure blood and incapable of reproducing black, but they are less esteemed by amateurs. The feathers of the hackle, the crest, loins, tail, are extremely long and tufted, and they form with those of the other parts of the body a plumage more fluffy and abundant than that of any other variety.

### BATH AND WEST OF ENGLAND SOCIETY'S BRISTOL SHOW.

No. 1.

THERE is a sort of conundrum song which was wont a few years since to be warbled over "the dear old keys of the piano," as Mendelssohn used to call them, beginning, "What will to-morrow be?" and before one could think of the day of the year, or who was born on the coming day, or whether one had some engagement on it, was heard the very true but somewhat disappointing answer, "Who can tell?" I always felt that the singer of that disappointing song ought to have some special personal or vocal attractions, or one must be angry with her. "What will to-morrow be?" matters not much to that great majority of English people who happily have themselves and their goods under a rain-proof roof; but as to the good folks who are exhibitors at an outdoor show like that of the Bath and West of England, it is to them a very serious matter as to what will be the weather of the Show week. I had been fried some years ago at the Wells Show, and nearly drowned when the peripatetic Bath and West of England (aye! and Southern Counties in addition now) wandered off to Dorchester, where the rain poured on and on, and I ate my lunch in a tent, knee-deep in straw like a horse, and yet my feet got wet; but a better fate this year awaited Council and exhibitors, and holiday-goers at Clifton, for the weather on Tuesday (9th) was superb—warm and dry, and a nice air going on breezy Durdham Down; the flags streaming away, and now and then canvas beneath them flapping pleasantly. "What a pity," said Dean Swift, "that fine weather hurts anybody;" so I felt on Tuesday, for agricultural friends were lamenting the lightness of the hay harvest, and the shortness of the water.

Many of my readers are familiar with that world within boards the Bath and West of England Show, perhaps the most interesting of all the exhibitions at which I am present during the whole year. The weather being favourable, as this year it was, a visit to the Show was indeed a treat.

I enter the poultry tent, and the first thing that strikes me is the excellent ventilation. I next see that the birds are supplied with slices of mangold or beet, which they were picking at with relish—relish similar to those unfeathered birds who not far off were drinking lemonade. I must beg leave to remark upon the pleasure it gave me to find Mr. Hewitt had been able to act as Judge. As all of us had sympathised with him in his many trials and sorrows, so all will rejoice to learn that he has been able to rally himself and be at his old post.

This Show was held on nearly the same spot ten years ago, and I cannot but remark upon the improvement in poultry matters during the decade. Then a few comparatively had good birds, a few ardent amateurs and mongrels abounded; now one sees more and better birds than ever, far more persons are interested in poultry; and where one appreciated a good bird then, or "took in" a poultry paper, now there are dozens. Of course the continued dry and hot weather has told on the fowls, and ragged feathers were to be expected, but, considering the time of year, the condition of the greater part of the poultry exhibited was singularly good.

Out of the eleven pens of *Spanish* cocks nine may be said to belong to Bristol (for Brislington and Wrington are so near), and Bristol birds won. As to the first prize, Mr. Edward Jones's bird, it was altogether admirable in face and comb, and condition considering the time of year. In regard to the *Spanish* hens, about the first prize there was no manner of doubt; but a highly commended pen (No. 21, Miss E. Browne's), struck me as being better than the second-prize bird, if indeed there were not two highly commended pens better, but of course it is a matter of opinion.

As to the *Dorking* cocks (Coloured), the first-prize birds were massive, the second much inferior. The hens were a better class: out of the eleven pens six were worthy of a prize. The pens of three of the *White Dorking* cocks were empty; a pity this, but save a hollow comb on one bird, the rest were remarkably good. In the *White Dorking* hens the same goodness was to be observed.

My old friends the *Buff Cochins* were—well, "not to put too fine a point on it," not much to speak of, and less to write of. I would nearly as soon have bought the unnoticed as the noticed birds, the cup cock excepted. In hens the second-prize did not give satisfaction. The champion pens among the *Partridge Cochins* were extremely beautiful birds. There was a vast number of empty pens which should have contained *White Cochins*, and the full ones were not of very remarkable excellence.

As to the *Brahmas*, Dark or Light, "the cry is still, They come." I should not like to be the man who takes these big babies out of their travelling baskets; but as, I think, usually at Bristol, the Dark birds were the best. The great number of these birds now exhibited everywhere is the best proof of their usefulness, for though fancy may keep many small birds, utility there must be where large birds are kept in great numbers.

The *Game* fowls were numerous, and, as always, attractive. To my mind the second Duckwing cock was the best of that lot. In *Brown Reds* (cocks), Messrs. Lunt & Hassall's, first prize was a head of all the rest in his class. I must notice that Mr. Stagg, a Wiltshire fancier, was very fairly successful with his birds.

Next, the *Hamburghs*, and what an improvement in numbers and in goodness too! The first and cup bird (Mr. Beldon's) in the Silver-spangled class, is as charming a little fellow as ever walked. As I passed pen after pen of *Hamburghs* of the different varieties my words were, "Good again," "Good again."

The *Polish* were, I am also pleased to write, fairly numerous and very good. Cocks—first to a Silver, second to a Black, one only Golden, he got a commended. Hens—first to a Silver, second to a Black, and only a commendation to a Golden hen. Funny this, that in *Polish* fowls alone Silver is preferred to Gold! I was amused to hear a country humpkin, who possibly had strayed in from his cattle or pigs, exclaim in front of the *Polish* pens, with open eyes and mouth, "Oh! gracious, they heads!"

Among the *French*, the *Houdans*, the most useful, were the most numerous. These birds look like *Spanish* fowls before they had become aristocrats. The cocks especially, at Clifton, were very superior. Among the *Crèves* were some very fine birds, but plumage indifferent.

In the Any other distinct variety class there was an excellent *Black Hamburgh* first. (Why not more *Black Hamburghs*, O ye fanciers?); a good *Malay* second, who looked wicked enough to have committed a dozen murders and enjoyed them all, and to wish to commit still more. High commendations and commendations were numerous bestowed in this class, and deservedly. Some ugly *La Flèche* cocks appeared, and some excellent *Minorcas*.

Then came *Bantams*. There was but one pen of *Silver Sebrights*, but then they were real Silver, not pale Gold. I wish the owner could exhibit more, as they would be an ornament to any show, although they might not be quite equal to this pen. The *Blacks*, again, were very good, and Mr. Cambridge won deservedly. Among the many *Game Bantams* there were some gamey-looking birds.

*Aylesbury Ducks* were good, *Ronens* better. *Turkeys* were better still. In *Aylesbury Ducks* Mr. Fowler was actually beaten—a feather indeed in the winner's cap.

In approaching the other *Bantams* I must say I did not consider the *Game* birds were anything to boast of, while among the *Blacks* were excellent birds; and I scarcely need to say that Mr. Cambridge kept up his old fame. It is now natural to write Cambridge first at the boat race, and Cambridge first at the

Black Bantam race—a double success, at which I, a Cambridge man and friend of Mr. Cambridge, rejoice. For the Pigeons I reserve a word next week.—WILTSHIRE RECTOR.

(From a Correspondent.)

The poultry catalogue commenced with *Spanish*, and although these classes were well supported by Bristol, we could not help noticing the omission of the names of Messrs. Parsley, Hyde, and the late Mr. Lane, exhibitors who, in conjunction with Mr. Jones, made Bristol so famous for Spanish fowls. In their absence Mr. Jones carried off the first prizes and cups in both classes. In the first he also secured the champion cup for the best cock over a number of classes; we liked this bird, but did not think him of such high merit as many exhibitors imagined him to be from his position. The second-prize cock was neat, but rather deficient in face and lobe. Pen 6, the winner we think of the first prize at Bristol, had a fine face, but his comb will render him useless for exhibition. The class for hens was one of the best in the Show. Mr. Jones's victory here was an easy one, but we liked pen 21 better than the second-prize birds; they were better matched, and had smoother faces.

The *Dorking* classes contained a tolerably good lot; in Coloured cocks Mr. Burnell's bird, which has won so many prizes, was again first, a younger bird of great promise belonging to the same owner being second. In the class for hens, in many respects we preferred pen 51 to the first-prize birds, which were not well matched, having odd eyes, &c.

*Cochins*.—In Cinnamon and Buff the first and second-prize birds deserved their position; we also liked pen 71. In hens the first-prize pen contained only a single bird, its partner having died soon after the award was made. The second-prize pen we considered a great mistake, and think the prize should have gone to the next pen, No. 86, which were in every essential superior. In the Partridge cocks the first-prize pen was a neat bird, beautiful in colour, but rather small; he was entered at only £2, and quickly claimed. The first-prize hens, which also obtained the champion cup for the best pair of hens, were grand, the pencilling being all that could be desired; but their marking in many respects gave us the impression of a remote cross with Brahmas. This was confirmed in some degree by the comb of one of the hens, which as nearly approached a rose as a single comb. In White Cochins the first-prize cock was a fine specimen, shown in splendid condition.

The *Brahma* classes, with one or two good exceptions, were not what we expected. In the Dark cocks Mr. Lingwood showed a grand bird, which was first, and must have run Mr. Jones very closely for the champion cup. The class for hens contained a few fine pens, but they were very much out of condition; here we liked pens 146 and 143 better than the winners. The Light *Brahma* classes were inferior to the Dark. The *Game* classes contained many superior specimens, and the prizes were more distributed than usual. The *Hamburgh* classes were a great treat, and the awards appeared to give general satisfaction. The *Polish* and *French* classes were thought the best in the Show. In the *Crève-Cœur* Mr. Crabtree secured all the honours.

*Ducks, Geese, and Turkeys* were well represented, and some birds of extraordinary size were to be found.

*Bantams*.—The Sebright class had only two entries; the first, a pair of Silvers, had a remarkably good ground colour, and would have maintained their position in a much larger competition. The *Game Bantam* class contained a few pretty specimens. A nice pair of Black Reds were first, a pair of Browns with a Partridge-coloured hen second. In the class for single cocks Mr. Hall showed a bird that deserved special notice.

of *Hamburghs* exhibited in this district at any of the previous shows, there being superior pens of every variety. *Spanish* were decidedly poor, and a second prize was only awarded. Some capital *Crève-Cœur*s were shown, but the only other variety of *French* fowls, a pen of *Houdans*, were not good. The *Variety* class proved excellent, Black *Hamburghs*, Golden-pencilled *Hamburghs*, and a second pen of Black *Hamburghs* taking the prizes. The class of "Cross-breds" were, as usual, not praiseworthy. The *Game Bantam* class was spoiled by the fact that the principal exhibitor's entries were not forthcoming. A very choice collection of Black *Bantams* were shown, and a good pen of Golden Sebrights. None of the *Ducks* proved meritorious, but this was fully counterbalanced by the capital quality of the *Turkeys* that competed at Newmarket. Although prizes were offered for both Golden and Silver *Pheasants*, not a single entry resulted.

*Pigeons* were not an extensive show, but they were unexceptionably good, the Carriers, Barbs, and the Antwerps being of a very superior stamp.

Exceedingly fine weather brought with it a very large attendance of visitors, and it was plain enough that the inhabitants of Newmarket had determined to make the most of the day as a general holiday. The whole of the principal thoroughfares abounded with flags, banners, and other suitable decorations. The attention of the Committee to the wants of the poultry was most liberal, and ample provision was made against stress of weather had necessity required it.

**DORINGS.**—Any other variety.—1, L. Wren, Lowestoft. 2 and 3, No competition.

**GAME.**—Black or Brown Pheas.—1 and Extra for best pen in the Show, S. Mansfield, Newmarket. 2, F. R. Hall, Cambridge. 3, H. E. Martin, Southborne. Any other variety.—1, S. Mathew, Stowmarket. 2 and 3, F. R. Hall.

**COCHINS.**—Cinnamon or Buff.—1 and 2, W. Mansfield, Cambridge. 3, H. Yardley, Birmingham. Any other variety.—1, R. S. S. Woodgate, Pembury, Tunbridge Wells. 2, H. Yardley. 3, Mrs. E. Pryor, Welwyn.

**BRAHMAS.**—Light.—1, P. Haines, Palgrave. 2, A. F. Faulkner, Thrapston. 3, No competition. Dark.—1, 2, and 3, W. Mansfield, *hc*, H. Cooper, Cambridge.

**HAMBURGH.**—Gold-spangled.—1, J. Robinson, Garstang. 2, W. K. Tickner, Ipswich. 3, H. Reynolds, Lowestoft. Silver-spangled.—1, J. Robinson. 2 and 3, No competition.

**HAMBURGH.**—Gold-pencilled.—1, A. F. Faulkner. 2, W. K. Tickner. 3, W. Mansfield. Silver-pencilled.—1, J. Robinson. 2 and 3, No competition.

**SPANISH.**—1, Withheld. 2, J. S. Dew, Gamlingay Mills. 3, No competition.

**FRENCH FOWLS.**—1, J. Robinson. 2 and 3, W. Cutlack, jun., Littleport.

**ANY OTHER VARIETY.**—1, J. Robinson, Garstang (Black *Hamburgh*). 2, G. W. Boothby, Louth (Gold-spangled *Polands*). 3, W. Cutlack, jun., Littleport (Black *Hamburgh*). *hc*, T. Nash, Carlton Grange (Silkies); R. S. S. Woodgate, Pembury, Tunbridge Wells (Black *Polands* and *Silks*).

**CROSS BREED FOR TABLE PURPOSES.**—1 and 2, W. Cutlack, jun. (Brahma-Dorkings). 3, A. Markwell, Thetford (Light *Brahma* and *Dorkings*).

**BANTAMS.**—Game.—1 and 2, F. E. Hall. 3, No competition. Black or White.—1, C. Reed, Cambridge. 2, R. H. Ashton, Moulton. 3, No competition. Any other variety.—1, H. Yardley. 2 and 3, No competition.

**SELLING CLASS.**—1, A. F. Faulkner (White *Cochin*). 2, F. R. Hall (Red *Pile Game*). 3, W. Mansfield, Cambridge (Buffs). *Ducks.*—T. F. Upsher, Sutton (Rouen).

**DUCKS.**—Aylesbury.—1, T. Gannell, Milton. 2 and 3, No competition. Rouen.—1, T. F. Upsher. 2 and 3, No competition.

**TURKEYS.**—1 and 3, T. Gannell. 2, A. Markwell.

## PIGEONS.

**CARRIERS.**—1, H. Yardley. 2, No competition.

**POSTERS.**—1, R. Ruston, Chatteris. 2, H. Yardley.

**TUMBLERS.**—1, H. Yardley. 2, No competition.

**BARBS.**—1, H. Yardley. 2, C. Norman, Westerfield, Ipswich.

**JACOBIANS.**—1, F. H. Jennings, Newmarket. 2, H. Yardley.

**FANTAILS.**—1, H. Yardley. 2, J. F. Loveridge, *hc*, F. H. Jennings.

**TURBITS.**—1, R. Ruston. 2, H. Yardley, *hc*, G. Mann, Cambridge.

**DRAGOONS.**—1, H. Yardley. 2 and *hc*, W. Smith, Walton, Liverpool.

**ANTWERPS.**—1, H. Yardley. 2 and *hc*, F. R. Hall.

**ANY OTHER VARIETY.**—1, H. Yardley. 2, C. Norman, Westerfield, Ipswich (Trumpeters). *hc*, G. Mann, Cambridge (Black Trumpeters).

**SELLING CLASS.**—1, C. Norman (Barbs). 2, F. R. Hall.

Mr. Edward Hewitt, of Sparkbrook, near Birmingham, was the Judge.

## SEXES AT WILL.

"Thus having wasted half the day,  
He triump'd his flight another way."

The hatching season has again returned, and with it comes the old question of producing sexes at will. Cocks of one year old mated with hens two years old or more, usually produce a greater proportion of cockerels than pullets; and if more pullets than cockerels are wanted they may generally be obtained by mating old cocks with pullets.—(*American Fanciers' Journal*).

## POUTERS, ANY OTHER COLOUR OR MARKING CLASS.

PEACEMAKERS are precious souls, and much needed in this world, and in this capacity comes out my special Wiltshire friend, "WILTSHIRE RECTOR," at all times most amiable; but it must be understood that in an argument of this kind no compromise will suffice, and we Scotchmen can only settle such matters logically; and however red-hot we may get over a debate, we do not necessarily lose sight of friendship. In fact, we reverse the etiquette of the P. R., and shake hands at the conclusion of the affair, not at the beginning before mauling each other till past recognition, even by our seconds.

It appears to me that "WILTSHIRE RECTOR" has fallen into the same mistake as Mr. Wallace. The illustration of the

## THE NEWMARKET POULTRY AND PIGEON SHOW.

For a long series of years this Show has deservedly held a popular position among poultry exhibitors, as great care and attention to this department have invariably marked the conduct of the managing Committee. This season's Show was in no way behindhand, for more unexceptionable arrangements it would be difficult to imagine. A very singular feature of the Show, however, was the fact, that though not less than six prizes were offered for *Dorkings*, only a single entry, a good pen of Silver Greys, resulted. Of *Game* fowls, however, there was an entry remarkable for its excellence, Brown Reds, Red Piles, and Duckings being all good; the former so much so as to secure Lady Elizabeth Adeane's special premium for the best pen of any variety of poultry shown, besides the first position in their particular class. They were a first-rate pen shown by that veteran exhibitor of *Game* fowls Mr. Samuel Mathew, of Stowmarket, and were evidently one of the most interesting pens to spectators. The *Cochins* were not in sufficiently good plumage to merit particular mention. The Whites and Partridge-feathered were the best in plumage. Dark-feathered *Brahmas* were unquestionably shown in better condition than the Light ones. There has not been so good a collection

artist's materials is all very well, but I hold that the birds in the class which I support are finished pictures of themselves, and at the same time materials for others.

A perfect Mealy in every respect is a more beautifully coloured Pouter than any of the standard colours; and such being my decided opinion, I would join in agreeing to add it to the standard classes. I must again go over part of the ground by repeating that mismarked Pouters are not birds fit for any but the Selling class. I esteem them valueless, and often worse than valueless, as their mismarkings can seldom be bred *permanently* out. They will turn up every now and then in coming generations; still there are always exceptions to this as well as to other rules. Now here is the mistake. Mr. Wallace insists upon classing with the mismarked standard-coloured birds perfectly-marked Mealies, Sandies, Chequers, Silvers, Duns, &c., and sending the whole into the Selling class, which is I think absurd, and will not be allowed by the fancy. Why, five-sixths of the whole Pouter fanciers in Scotland keep those "off coloured" well-marked birds, and therefore they are, according to Mr. Wallace, excluded from our shows, or forced to offer their birds for sale at a nominal price in the Selling class. I do not require to tell Mr. Wallace that the standard-coloured Pouters are in the hands of a very few in Scotland, that the few may be counted on the ten fingers, and, according to his argument, the shows are to represent the property of the few only. I do not think this is the way to encourage the "young or poor" fancier, or meet the grand question of the "bread and butter."

My friend, "WILTSHIRE RECTOR," proposes smaller prizes for Pouters other than standard-coloured birds, and that the Splashes be excluded altogether. Well, I should never think of dictating to committees on the former at all; let them treat as their means will allow; but, then, if the prizes are good for those birds they will find the classes pay all the better. As to the latter, there are often some nicely-marked birds among them, as in marked Canaries, and others are verging on pure whites, with, for instance, a grizzled point of the tail, and they are often so handsome as to be perfection in form, the imperative in the true Pouter, not to mention the wonderful size to which some of them attain. Why, then, exclude such birds? A fancier suggested to me that they might have a separate table. Well, be it so, or a separate room if you will, but do not exclude the produce of the season's labour of some "young or poor" fancier. I know this will draw out the sympathies of my friend, and hope my argument will also show up the "off-coloured" birds to him in a better light—their true light.

But "WILTSHIRE RECTOR" says, "I want progress and advance towards perfection." We all want this, and none more so than myself. Taking this for granted, then, we must encourage the breeders of the very birds that do, and only can, help us on to that much-envied goal. We want our friend here, not to hang over a show for a day and a half, but for two or three weeks, and will promise to show him pictures before they have been painted, which will change his views altogether, and we will also give him a lesson in pure Scotch.—JAMES HUIE.

**EARLY-LAYING BRAHMA PULLET.**—I think it may be interesting to mention that one of our Dark Brahma pullets, hatched on the 25th of January, laid her first egg on June 7th, being only four months and ten days old.—E. PEEL, *Rock Ferry, Cheshire.*

## THE CANARY.—No. 2.

**MULES.**—A female Canary will mate with several varieties of birds, and their offspring are called Mules. The males from some of these crosses are fine singers, and command high prices on account of their beauty and song. These Mules mated again with the female Canary are prolific. Among the varieties of birds employed in producing Mules may be mentioned the Linnet, Goldfinch, Bullfinch, Siskin, Redpole, and Bluebird, besides several other varieties.

Before placing the male and female Canary together, this precaution should be taken:—The female should be put in the breeding-cage and hung on one side of the room, while the male should be suspended directly on the opposite side of the room, in a separate cage, in sight of the female. When he sings and calls to the hen bird, and she returns his call, then they can be placed together, and though they may at first quarrel, it will only be of short duration; they will soon become reconciled with each other and will mate. When the male is observed feeding the hen, you may be certain it is right.

After having been mated about a week the hen will lay from four to six eggs (one each day), and will sit from fourteen to sixteen days, bringing out one bird per day, in the same order as the eggs were laid. Never disturb the eggs, or they will not hatch.

The birds may be mated during the months of February, March, or April. There should always be placed in the mating-cage a piece of mortar for the formation of shell, or the hen may lay soft-shell eggs. There is also required some untwisted

manilla rope, cut into sections of 1 inch in length, with, perhaps, an addition of a small quantity of deer hair, for the formation of a nest.

After the young are hatched, if the male bird gives his mate too much attention, or is quarrelsome, he should be placed in his own cage until the young are nearly feathered and leave the nest to feed themselves. After they have perched a few nights they can be separated from their mother and the male returned, and another brood reared, which operation may be repeated until seven broods are raised in one season.

**FOOD FOR YOUNG BIRDS.**—As additional food for young birds, besides canary and rape seed, they should be allowed hard-boiled egg and cracker rolled fine, and fed to them in small quantities several times each day. The same food should be given to the old birds during the breeding season. When the young birds are able to crack seeds, which they will do at six weeks of age, the soft food can be replaced by cracked seed or soaked rape seed. Hemp seed should never be fed, as it will kill them.

Never allow two crested birds to pair, as their progeny are liable to be bald or malformed about the head.

One male bird will serve half a dozen hens during the breeding season. This plan, in my opinion, is more certain to raise young birds. The parent birds can occupy a small room with nests fastened to the wall, with material handy for constructing nests, also food and water. A German friend pursues successfully this plan every year, and it is marvellous to note his success in raising young.

Some Canaries will never mate; nothing will reconcile them. In this event another hen should be tried until one is found that is disposed to assume the responsibility of rearing a family.

The female bird builds the nest, and the male selects the location and carries the nesting material to his mate. In constructing the nest the female is in constant motion, and by her loving manoeuvres invites her mate to the act of pairing.

The eggs are of a sea-green colour, more or less spotted and streaked with reddish-brown and violet. The male sits on the nest, relieving the female a few hours each day during the period of incubation. Should either of them become addicted to the vice of breaking their eggs, they should be bonitfully fed with egg and bread, which should be constantly kept within their reach. Should they persist, the eggs should be removed as fast as laid, and their places supplied with artificial ones.

When the young are hatched the male assumes the chief responsibility of feeding them, which consumes most of his time.

Instances are recorded of talking Canaries. One is mentioned by Professor Hawkins; a bird that was exhibited in the streets of London a few years ago. Mr. Sothly, in a communication to the Zoological Society of London, gives a description of a talking Canary, owned by a friend, that can whistle a few bars of "God Save the King," and also repeat a few words, as "Minnie," "Kiss Minnie," &c.

Not many years ago a travelling showman will be recollected as exhibiting in the streets of the principal cities, some performing Canaries. They were taken from the cage and placed on a small stand, dressed in diminutive clothes, some harnessed in a waggon, another driving, and others riding in the carriage. At a given signal the coach started, and at the ringing of the bell they stopped to be put into their cage. They were again placed upon the table to exhibit their proficiency in drill. All were arrayed in regimentals, guns being held in one claw, one bird acting the part of drill-master, and when he whistled a few notes the soldiers hopped on the other foot, keeping time. Finally the performance ended by one of the number firing a diminutive cannon.

Dr. J. M. Bechstein, in his "Natural History of the Birds of Germany," and who is an acknowledged authority, relates the following instance of their sagacity, and remarks that instances are known in which they have not only been taught to repeat short words distinctly, but to distinguish colours, numbers, letters, &c. He also says—"I once saw a female in possession of a person named Jeanlot, of Befort, in Alsace, which selected from the alphabet and placed in order the letters of certain words, added, subtracted, and multiplied in German, and indicated, by means of numbers, the exact time of a watch. He had also three males with him, which were able to select letters and numbers which were named. Hunger had been the chief means used in the education of all."

**DISEASES AND TREATMENT.**—Canaries are subject to diseases as well as the human family, which also yield to medicinal agents.

**Moulting** is a critical period, and great care should be exercised at such times to keep them from being exposed to draughts of air, and to see that they are abundantly supplied with food and water; a change in diet is very beneficial. A piece of boiled carrot should be given them often, also a little hard-boiled egg, which should be left on the shell, for this will keep it moist longer than if crumbled in a dish. A little saffron put in water will assist them to cast off their plumage, and a nail dropped into their water will serve as a tonic. As a consequence

of moulting improperly, it is not uncommon for them to suffer from loss of voice; a change in diet, with boiled egg, or white bread soaked in milk and squeezed out, will often be of benefit.

Colds are frequently contracted by caged birds when exposed, even temporarily, to draughts of air, which is manifested by frequently shaking the head, and sitting dumptily upon the perch. Give them an abundance of soft food, also linseed, for a considerable period.

Costiveness is remedied by change of feed; give them apple, lettuce, chickweed, or celery. Should they have diarrhoea, avoid green food, and give them crushed seed mixed with the yolk of an egg; also give them the seed of red pepper.

Asthma is also often witnessed about the season of moulting, or from taking cold. Give them a moist diet, and the small pods of cayenne pepper [Capeicums] broken into small pieces.

Epilepsy is brought about by overfeeding and lack of exercise. It is often fatal. Venesection is recommended by cutting the claws sufficiently to draw blood. Give them a moist diet, with sweet apple.

Mites are produced by neglecting to cleanse the cage, and by not allowing the bird to bathe freely. When thus affected the bird will be observed to pick itself at all hours of the day, and by its being very restive at night, and flying about the cage.

Cleanse the cage, and dust dry sulphur under the feathers of the bird; or catch the bird and pick him up in a piece of flannel, with a few drops of spirits of turpentine upon it, taking care not to confine his head. When removed it will be full of vermin. Repeat it as often as necessary until all are removed, usually at intervals of a week; three or four operations will be sufficient. Another method is to expose the cage and bird to an intense sunlight; the mites will then leave the bird and penetrate the crevices of the cage, then remove the bird and scald the cage with water made alkaline with super-carbonate of soda.

Sore feet is sometimes caused by lack of cleanliness, or by fibres of cotton or wool entwining the feet and cutting to the bone. Remove the offending substance, and anoint with mutton suet. Allow the bird to bathe freely.—JAMES S. BAILEY, M.D.—(*American Fanciers' Journal*.)

### FACT VERSUS SPECULATION.

I AM obliged to "B. & W." for the above heading. It is a fact that I have asserted again and again that honey as formed in flowers is crude and imperfect, and is swallowed twice before it becomes honey proper. I have asserted in this Journal that for fifty years I have been seeing, handling, and tasting both crude and perfect honey, and that they are not one and the same. The bee-keepers of my native village have been acquainted with the fact of the difference for more than half a century. It is a fact that I have asked "B. & W." to put the matter to the test, suggesting experiments, which he said he would like to try. If he will put the matter to the test of experiment he will be able to adduce and deal with facts. I will endeavour to do the same when he has told us the theory he says he has to offer touching evaporation.

If "B. & W." will not put the question at issue to the test, perhaps some of the readers of this Journal will do so. It is a very simple matter, not very important, and may be settled in a very satisfactory manner in less than twenty-four hours. Given a fine morning with a south or west wind, filling the flowers with honey, and given a bar-frame hive with one empty comb only in it. Well, at 8 o'clock A.M. put a swarm into it, and at 3 P.M. on the same day remove the comb and shake the honey out of it by any process possible. The honey so obtained will be crude, thin, and imperfect, very unlike honey proper both in taste and appearance.

"B. & W." applauds "Mr. Lowe for the brave and able manner in which he seeks to save the good steamer from shipwreck," &c. Fortunately the vessel has hitherto been sailing in seas often crossed, and not one rock or breaker has been seen by those on board. Mr. Lowe's second letter did not contain anything to weaken my positions, and hence I did not reply to it. But as "B. & W." has revived the question, I may here say that the fact of some bees being hatched on the twentieth day from the egg does not prove that all were. Mr. Woodbury found some hatched on the eighteenth, and Mr. Shearer some on the twenty-fourth day. As to the removal of eggs from some cells to others by the bees, which Mr. Lowe says never takes place, I have said I have seen it done hundreds, if not thousands, of times. If Mr. Lowe were here this week I could give him proof—ocular proof, that bees do take eggs from worker cells and place them in royal cells. So convincing an instance of it have I now in my apiary, that for some days I have been desirous that some half dozen advanced bee-keepers would call here and see for themselves. Facts will assert themselves and come to the front. All I ask at present is that apiarists will test the truth of my statements before they attempt to refute them. Then

we shall have solid facts, not mere speculations, to handle.—A. PETTIGREW.

### ARTIFICIAL AND NATURAL SWARMING.

ON the 5th inst. I swarmed artificially a very strong hive. During the 6th and 7th the bees in the mother hive seemed very excited, hanging in a large mass in front of the hive. On the 8th a second swarm issued from it, atreng, and yet leaving a large number in the mother hive. Now, this second swarm issued three days only after the first swarm had been artificially taken off. How is this to be accounted for? Does it not show that royal eggs had been laid for some ten or eleven days before the first swarm was taken off, and that the young queens hatched on the 7th (say), led off a swarm on the 8th? If so, is this not unusual? Although the hive was full of bees, and, indeed, overflowing, and although the weather for a week or more before the first swarm was taken was warm, the hive failed to swarm naturally. I cannot explain it in any other way, for I presume such a thing as a swarm going off without a queen is unknown.—W. E. M.

[The conduct of your bees on the occasion referred to is very unusual, if you succeeded in taking the queen from the old hive with the artificial swarm. If the bees in the swarm did not return in great numbers to the old hive, where did the large mass hanging in front of the hive come from? Bees do not hang out after either natural or artificial swarming. It is most unusual for hives to send off second swarms three days after artificial swarming. We have never before known such a case. Doubtless the young queens had been in their cells ten or twelve days before you swarmed the hive artificially, if it was really a second swarm that issued three days afterwards. If the old queen had never been removed, or if she had returned to the old hive, it was in reality a first swarm you speak of as a second. The whole affair is so extraordinary that we are strongly inclined to believe that your second and natural swarm contains the old queen, or otherwise both swarms have young queens, the old queen having died previous to swarming. Did you see the old queen in the first swarm, or hear the young ones piping after it had been removed? We fancy something will become evident to you explaining the whole mystery.]

### QUEEN NURSERY.

I HEREWITH send you a description of a queen nursery that I have used for the past six years, and found it to be very useful, especially when one has more queen cells than nuclei. To make the cages, use a round stick, about  $1\frac{1}{2}$  inch in diameter; saw into pieces  $1\frac{1}{2}$  inch in length; into these blocks bore three-quarters-of-an-inch holes three-quarters of an inch in depth; coat the inside with beeswax to prevent the wood from absorbing the honey from the sponges. Take painted wire cloth, cut into pieces  $3\frac{1}{2}$  by  $4\frac{1}{2}$  inches; roll this around two of the blocks, tacking one end fast. Put a division lengthwise of an ordinary frame of whatever hive you use, 4 inches below the top piece of the frame, then halfway between the division and top piece pass a wire clear around the frame, and the same way below the division piece and above the bottom piece of the frame. The wire is to hold the cages upright.

If the queen cells have been started from larvae, on the ninth or tenth day cut out and transfer to the cages by pinning into one of the blocks; put a sponge saturated with honey in the other block. To get bees into the cages, dip the queen cell into honey and lay it on the top of the frames, and when six or more bees have clustered on it place in the cage, and fasten by pressing in a tack. Set the cages into the frame, the cell pointing downwards. Place the frame in the centre of the populous stack, which must be queenless. As fast as the queens hatch remove the cells and put in a sponge with honey in their place. When queen cells are started from the egg do not transfer until fourteen days old.

All that is required to hatch the cells is heat. During warm weather the cages may be placed in a honey-box and set on top of the frames. I have frequently had them hatch in the house. Keep them in any place you find most convenient, only keep them warm enough.

Now for the best plan to introduce the virgin queens. I have succeeded frequently in taking the queen as soon as hatched, and placing her on the comb among the just-hatching workers; frequently have had her killed. The beginner, I think, will succeed best by using the cage the queen is hatched in. Place the cage, with the queen and bees in it, between two brood combs of the hive or nucleus; let it remain there at least three days, then remove one of the blocks, and in its place tie two thicknesses of newspaper wet with honey or sweetened water; replace the cage in the hive, and the bees will gnaw her out in a short time. I have had young queens make their "bridal trip" the same day they were released. I have used an arrangement by which the queen could fly from the cage in the open

air to meet the drone; but it required some one to be at hand, else she would often attempt to enter the hive at the entrance. I also had them arranged for passing into a fertilising box to meet the drone; but this proved an entire failure, as all other plans I have ever tried.

This nursery cage is one of the best for sending queens by mail when they will be a week on their journey. Several have written to me asking whether I will continue to send comb and eggs by mail. I will here say that it proved a failure, except in one or two instances. The main difficulty is that the bees remove or destroy the eggs. The comb probably receives a peculiar scent from the mail bags.

The nursery cage will also be found quite useful as simply a "queen-cell protector." Cut out and transfer to the cages, place a cage between two brood combs, leave twenty-four hours. If hatched, release the queen at once; if not, remove the cage from over the cell, and replace the cell in the hive.—F. G. McGRAW.—(*American Agricultural and Bee Journal*.)

A BRITISH BEE-KEEPERS' ASSOCIATION has been formed for the encouragement and advancement of bee-culture. Its first Exhibition will be held at the Crystal Palace on September 8th, 9th, and 10th, when prizes will be offered.

### OUR LETTER BOX.

BOOKS (*T. F. S.*).—Estoe's book on Pigeons is out of print. We will see about the extract you mention.

POLANDS SHOULD BE COMBLESS (*W. G.*).—No Poland fowl should have a comb or gills if it is to meet the requirements of a first-prize bird.

FATTENING FOWLS (*C. M. P.*).—To fatten fowls you should put them in a small coop, where they have only room to stand up and move sufficiently to prevent cramp. They should be in a dark place, and be covered with a sack or a piece of carpet. They must not take exercise. It is a great enemy to fat. Their food should be fresh-mixed and given three times per day. When the food is put before them, light enough should be admitted for them to see to feed; as soon as they have done so, the light should be excluded, and the birds then sit down and thrive. They should be fed at daybreak, or at any rate before six in the morning.

TURKEYS' LEGS DISEASED (*F. G. S. R.*).—If the disorder were one attacking Turkeys in general, the hens would be sufferers as well as the cocks. Did your birds roost high? If so, the weight of a cock Turkey flying down would cause disease of the feet and jarring of the legs, which might lead to the complaint you mention. The weight of a cock Turkey—say 20 lbs., is a serious thing for a bad leg to carry, and hence the bird sits down. The dry fevered feeling causes itching, and the patient wants to allay it by pecking. Did their spurs cut them? In such cases the only treatment is to purge freely, and feed on cooling food.

FOWLS TRAVELLING TO A SHOW (*G. M.*).—Whatever the weather may be, we advise you to start your poultry for a long journey, whether to a show or otherwise, with only soft food in their crops.

CHICKEN MANAGEMENT (*L. D.*).—We have been successful in rearing chickens. We keep the hens under their rips till the broods are eight weeks old. Nothing is more unprofitable than to keep birds that will never improve. They are of more value now than they will be in three months' time, because young table poultry is scarce. This rule applies more particularly to cocks. They can make no return; pullets will lay.

BEWARE OF OVERSTOCKING (*Novice*).—We think you have hatched as many chickens as your space will accommodate. Nothing is more unprofitable than to be overstocked.

BREEDING LINNET MOLES (*Inquirer*).—You must first see how the hen feeds this nest, because if she feeds only indifferently, or not at all, you will, in all probability, sacrifice the young ones by removing the cock. But you must remove him at once, and examine the nest at intervals to see if the young ones are being attended to by the hen. If she is in health she will feed. Put the linnet in the next division of the cage, which I apprehend is separated only by a wire partition, or hang him in front of the cage against the wires, and when the hen is beginning to get fresh again turn him in. You can remove the young ones from the hen when they leave the nest, and give them to the cock, who will "ken his ain hairs" and continue to feed them.—W. A. BLAKSTON.

CAYENNE FEEDING (*Narberth*).—Mix the cayenne with the egg and bread crumbs or biscuit, and begin to feed when the young ones are about seven or eight weeks old, or when old birds are showing signs of moulting, and continue through the moult. You say, "Do they eat it of their own accord?" Try them! You can begin with a small quantity, but it is not necessary to coax them. Mix as much as a teaspoonful with an egg. Supply just as often as you would supply soft food, fresh every morning.—W. A. BLAKSTON.

CANARIES MOULTING UNSEASONABLY (*Stoke-on-Trent*).—I know of no preventive or cure for moulting out of season. It is strange that all the birds in this instance should have gone into moult.—W. A. BLAKSTON.

BEES FORSAKING A HIVE (*F. R. L.*).—Hunger and foul brood often cause bees to abandon their hives. Sheer want makes them leave their poverty-stricken abodes, and as "hunger swarms" cast themselves on the wide world. But hunger swarms are of rare occurrence from hives with healthy brood in them unhatched. Foul brood is probably at the bottom of your misfortune. When it exists to some extent in a hive, the bees are so discouraged and disgusted that they leave their hive as a swarm, and try to find a home elsewhere. Swarms thus driven from their homes generally settle on branches of trees like natural swarms for a day or two.

STOCKING NEIGHBOUR'S HIVES (*C. T. Salisbury*).—You might at any time tempt No. 2, by simply driving the bees, queen and all, out of No. 1, top or bottom, and placing them in No. 2. No. 1 would then rear a queen artificially, or you might replace the lost queen by an Italian queen as you suggest. But it is impossible to say when you are likely to find royal

cells in No. 1. Probably not at all this year. You can only tell by close observation.

SUPERING (*T. T., A Subscriber*).—You may put a super on your swarm a fortnight or three weeks after hiving, according as they fill the hive. It is of little use putting on supers after the first week in July, except in remarkable seasons, or when you have access to heather.

SWARM RETURNING TO PARENT STOCK (*E. F. W.*).—Bees will return to their hives after swarming, and it is difficult to account for it. Not a year passes without its occurrence. Perhaps in hiving, the queen rose and got beyond scent of the bees, or she may have returned home leading the way herself. This is not unlikely, as you say the hives were close to one another. Your swarm was certainly not taken too quickly. We always hive as soon as they have fairly settled. If you wish them to swarm, why do you not swarm them artificially according to instructions recently given in this Journal? Otherwise we would give a large super and look for honey.

MEAD (*Suffolk*).—To make mead:—Four five gallons of boiling water upon 20 lbs. of hops; boil, and remove the scum as it rises; when it ceases to rise add 1 oz. of honey, and boil for ten minutes afterwards; put the liquor into a tub to cool. When reduced to 75° of Fahr. add a slice of bread toasted and smeared over with a little yeast, let it stand in a warm room, and stir occasionally; and when it carries a head two it, filling the cask up from time to time. When the fermentation has nearly finished hang it down, leaving a peg-hole, which may soon be closed; bottle in about a year.

### METEOROLOGICAL OBSERVATIONS,

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.						Rain.
1874. June.	Baromet- er at 32° and Sea Level.	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature		In. —		
		Dry.	Wet.			Max.	Min.	In sun.	On grass			
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
We. 10	30.141	65.6	60.0	W.	63.4	71.8	55.0	124.4	61.3	—		
Th. 11	30.249	61.9	62.6	S.W.	60.8	71.8	44.7	121.5	49.6	—		
Fri. 12	30.459	64.1	46.8	N.	61.5	69.1	45.0	123.1	41.9	—		
Sat. 13	30.401	56.0	48.0	N.	60.2	65.2	39.5	123.6	34.6	—		
Sun. 14	30.388	56.2	48.2	N.	58.8	66.0	41.4	118.7	38.0	—		
Mo. 15	30.535	58.8	52.1	N.W.	58.5	68.6	43.9	122.3	40.8	0.029		
Tu. 16	30.301	52.3	51.0	N.	60.0	65.0	48.6	119.2	47.6	0.453		
Means	30.352	57.9	51.2		60.3	68.2	45.4	121.4	42.1	0.503		

### REMARKS.

10th.—Very dull part of day; finer evening.

11th.—Overcast at times; very dusty day.

12th.—Cool, bright, and fine throughout.

13th.—Fine, but rather cold.

14th.—Cold, but pleasant day.

15th.—Cool and fine; a little rain in the evening and night.

16th.—Wet in the morning, but fine during part of the day, although rather cool; cloudy in the afternoon; rain in the evening and night.

Temperature rather lower than last week. Barometer still high, a little higher than last week.—G. J. SYMONS.

### COVENT GARDEN MARKET.—JUNE 17.

THE cold unsettled weather has to some extent interfered with the supplies, and is causing much injury to the Strawberry crop. Importations continue heavy, comprising Cherries, Strawberries, Apricots, Carrots, Turnips, Globe Artichokes, Tomatoes, and Peas. Hothouse Grapes are very plentiful, and much lower in price.

#### FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	1	0	0	Malberries.....	1	0	0
Apricots.....	2	0	4	Nectarines.....	doz.	8	0
Cherries.....	2	6	0	Oranges.....	100	4	0
Chestnuts.....	0	0	0	Peaches.....	doz.	12	0
Currants.....	4	0	0	Pears, kitchen.....	doz.	2	0
Black.....	do.	0	0	dessert.....	doz.	0	0
Figs.....	doz.	8	15	Pine Apples.....	lb.	5	0
Filberts.....	lb.	1	0	Plums.....	1	0	0
Cobs.....	lb.	1	0	Quinces.....	doz.	0	0
Gooseberries.....	quart	0	6	Raspberries.....	lb.	0	0
Grapes, hothouse.....	lb.	1	6	Strawberries.....	1	0	0
Capicous.....	100	8	12	Walnuts.....	bushel	10	0
Carrots.....	each	4	0	ditto.....	100	2	0

#### VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	doz.	3	0	Lettuce.....	doz.	1	0
Asparagus.....	100	3	0	Mushrooms.....	pottle	1	0
French.....	3	0	0	Mustard & Cress.....	pennet	2	0
Beans, Kidney.....	100	2	0	Onions.....	bushel	4	0
Broad.....	bushel	6	0	pickling.....	quart	0	0
Beet, Red.....	doz	1	0	Parsley per doz. bunches	2	0	0
Broccoli.....	bundle	0	8	Parsnips.....	doz.	0	0
Cabbage.....	doz.	0	0	Peas.....	quart	1	0
Carrots.....	100	0	0	Potatoes.....	bushel	3	6
Cauliflower.....	bunch	0	6	Kidney.....	do.	8	12
Celery.....	doz.	4	10	New.....	1	0	0
Celery.....	bundle	1	6	Radishes.....	doz. bunches	1	0
Coleworts.....	doz. bunches	2	4	Rhubarb.....	bundle	0	0
Cucumbers.....	each	0	6	Salsify.....	bundle	1	0
pickling.....	doz.	0	0	Scorzoneria.....	bundle	1	0
Endive.....	doz.	2	0	Seakale.....	basket	0	0
Fenel.....	bunch	0	3	Shallots.....	lb.	8	0
Garlic.....	lb.	0	6	Spinach.....	bushel	2	0
Herbs.....	bunch	0	3	Tomatoes.....	doz.	8	0
Horeradish.....	bundle	3	0	Turnips.....	bunch	0	4
Leeks.....	bunch	0	8	Vegetable Marrows.....	doz.	2	3

## WEEKLY CALENDAR.

Day of Month		Day of Week	JUNE 25—JULY 1, 1874.	Average Temperature near London.			Rain in 43 years.		Sun Rises		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
				Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
25	Th		Ipswich Horticultural Show.	73.0	49.2	61.1	20	45	at 3	19	at 8	14	4	51	0	11	2	16	176
26	F		Cambridge Term ends.	74.3	49.2	61.7	20	46	3	19	8	39	5	7	1	12	2	29	177
27	S			72.8	48.2	60.5	15	47	3	19	8	46	6	24	1	13	2	41	178
28	SUN		4 SUNDAY AFTER TRINITY. Coronation Day.	73.7	49.1	61.4	16	47	3	19	8	54	7	57	1	14	2	53	179
29	M			73.2	48.5	60.8	12	48	3	19	8	59	8	39	2	0	3	5	180
30	Tu		Stratford Horticultural Show.	73.1	48.3	60.7	15	48	3	18	8	45	9	38	3	16	3	17	181
1	W		Royal Horticultural Society's and National [Rose Show.]	74.8	50.8	62.8	20	49	3	18	8	18	10	51	4	17	3	29	182

From observations taken near London during forty-three years, the average day temperature of the week is 73.5°; and its night temperature 49.0°. The greatest heat was 93°, on the 27th, 1823; and the lowest cold 31°, on the 23th and 30th, 1833. The greatest fall of rain was 1.18 inch.

## GRAPE VINES IN POTS.



It is hardly necessary to explain, even to the denizen of a crowded city who has spent the whole of his life there, how much a plant in a pot has to depend on its attendant for the means of its existence. Inattention in giving it water when it is wanted will not unfrequently result in the death of the plant, especially if the neglect be carried too far, and even the delay of a couple of hours in certain conditions of a plant's existence is attended with bad consequences. Although the Vine is not by any means a delicate plant, and will even endure a great amount of bad usage before it succumbs, yet, as the object is to grow it to the greatest possible state of perfection, merely keeping it in a state of existence will not do—the plant must flourish; and there are few plants cultivated in pots which are looked upon with greater pride than a well-grown pot Vine. Though the cultivation of the Vine in that way is, perhaps, one of the most simple processes of plant culture, it is not always that a successful result follows. It is a severe ordeal for pot Vines to ripen their fruit very early in the season—say in the beginning of April, and one which acts as a test of the previous year's management. Very different is the state of things when ripe fruit is only wanted by the middle of June or later—the test of the past year's treatment is not half so trying, as may easily be understood on growing plants for both purposes. Supposing a number of canes have been grown and ripened during the summer, and it was desirable to have ripe Grapes by Easter, a few of the best Vines are selected and placed in heat in October, first gradual, and then warmer; let them be attended to in the most skilful way, all mishaps and other misfortunes avoided, and nothing omitted that is necessary to secure success, and let another batch of the same Vines, in every respect like those previously acted upon, but which had rested undisturbed by heat or other excitement, be placed in the forcing house in February, and mark the result—the Vines last introduced will show much finer bunches, and will also bring them to perfection better than the early Vines. This is, of course, subject to the condition that they have been attended to in their growing period; but even here less care and attention are required than for the earlier batch, and in very many instances the fruit bears no resemblance to the other, although the canes may have been as nearly alike as possible in the preceding autumn, or if there was any difference, those intended for early forcing were the better.

Now, as it has been shown that it requires the best canes that can possibly be procured to produce the earliest Grapes, the question arises, How are such canes to be had? and on this question hinges what is often thought to be one of the greatest feats of gardening skill. One grower insists on its being possible to produce such canes in one year, while another takes two years to do it, and affirms it is accomplished with less difficulty and with

greater certainty in two years than in one. Hence arises the question, Is A right, who insists one year is sufficient? or is the method of B, who accomplishes his object with much less forcing, to be preferred? This subject has been again and again discussed at gardeners' meetings, and to those not versed in the practical working of such things it would appear that A has the best of it—"Saving a year," he says; but experience does not always prove that there is a saving. A good well-grown cane is not like a Mushroom: it does not spring from the bud of the previous year into the well-proportioned and well-ripened cane of some 6 or 8 feet long in one night, or it may be two or three times that length. True, there is no difficulty in getting it of almost any length that is wanted, but is such a cane suitable for early forcing? As far as my own practice is concerned I give the preference for very early forcing to canes that have been grown in two years, as there is a greater certainty of success than where they have been hurried to make their growth in one; and I base my opinion on the following reasons, which it may not be too much to say are the result of many years' practice, and I also believe the course of treatment is the same as that recommended by some of the most successful growers of very early Grapes.

Where ripe Grapes are wanted at Easter, or as early as it is possible to have them, the necessity of commencing forcing as early in the autumn as can be done is apparent to everyone. It is of no use saying that nothing is gained by beginning so early; and it is true that nothing is gained, but, on the contrary, something is lost by beginning too soon if the Vines are not in a condition to bear forcing and produce fruit, and perfect it accordingly. Now, to accomplish the latter they must not only have been well grown during the preceding year, or rather season, but they must also have had a "rest;" and as it is advisable very often to put them into their forcing quarters in October, how much rest has a one-year-grown cane had before that time; or, in other words, is it possible to perfectly ripen a cane in one year as early in the season as it can be done in two? I confess I have never been able to do so, and I much question whether those who say it can be done ever tried the two-years plan with the same amount of skill and determination to succeed which they have thrown into the matter when they accomplished the object in one year. True, A, with superior means, may produce better canes in one year than B can do in twice that time, for the reason that B's means are defective; but this is not the way to put the question. Cannot A, who is possessed of a number of small healthy young Vines early in the autumn, convert these small canes into large ones sooner than he can the unrooted head? and if he can do so, and produce by that means a cane which will perfectly ripen its wood a month earlier than one that has to start from the beginning, well, then, that month tells its tale throughout the whole of the next forcing season, everything else being the same, and I am not sure but more than a month is gained in this way. My own practice would often point out that very much more than a month is gained. For

several years I have in a great measure grown what pot Vines I require for forcing on the two-year system, so that, excepting in the case of a new variety, I have not grown any quantity on the quicker mode. The practice here is to try and get Grapes as early as possible, and I certainly think the two-year-old system is the better for that purpose; and if best for very early work, the Vines must also be better for after crops, not but that a very good result may follow with canes of one year's growth for second and later crops, because in this case there has been a greater period of rest given, which is a matter of the greatest consequence in the early forcing both of the Vine and other things.

As rearing Vines from eyes has been so often alluded to in these pages by writers who are well versed in the matter, I need not refer to it here, neither will I enter at any length into the character of the soil best suited to the Grape Vine. I am, however, no advocate for lime rubbish, nor, in fact, lime in any form if it can be dispensed with. If a good rich mellow loam from land overlying the sandstone can be had, I should prefer it without any admixture whatever, unless it be sand, in which case I would prefer drift or river sand to that from a pit. Manure may be entirely dispensed with in the mixture, as that can be more easily given in the liquid form when wanted; but this will not often be needed until the Vines are in fruit, when it may be useful, and may be liberally given; but while the canes are growing it has a tendency to make them gross and pithy, so that although they may be large and robust-looking, they have not that hard wiry character about them which is the best guarantee of good useful fruit, and which of late years has been so much sought after. Of course healthy foliage is necessary to produce this, and Grape Vines ought not to be grown with plants, infested with red spider or other pests of a like kind. Attention to this, where practicable, is of the greatest importance, especially in the second year when they are perfecting their growth. Our practice is to secure some of the best eyes we can at the autumn pruning of the Vines, put them in small pots, and plunge them in the tan bed of a Pine house, which bed is of more than the ordinary width, being upwards of 7 feet; then there is a 3-feet pathway, with in front a shelf between 2 and 3 feet wide, on which we place potted Vines and Cucumbers in winter, with Kidney Beans beneath the Vines, and in summer it is used to grow and ripen-off the pot Vines required for the next season. This house is upwards of 80 feet long, and being isolated from other forcing houses, we have been anxious to allow nothing from any of the other houses to enter it, as Pines more than Vines are so liable to be attacked by two of the worst of insect pests, and it is no easy matter to keep these under when only a glass door frequently opened is the only means of separation. The house is span-roofed, the north light being the shorter; there is also a front light of about 2 feet, and the nature of the ground allows a height of nearly 4 feet of front wall. The Vines, when they have partly ripened their wood inside the house, are removed outside and fastened to the wall to finish the ripening and hardening of their wood in the full sun, but the pots are shaded from fierce sun by old mats or litter of any kind; very often the haulm of peas is used for the purpose. Here the Vines remain until some have to be taken inside for forcing, but previous to that they are pruned to the length required, which in our case is about 6 feet. They are chiefly Black Hamburg and Buckland Sweetwater. I may add that it is prudent to shorten the Vines intended for the first batch as early as convenient, say not later than the 1st of September, to the length at which they are to remain, but a few small laterals may be left till a later period, or when the remaining leaves are fairly ripened, when they are removed; but the early-started Vines are so liable to bleed, that unless they have been headed-in some considerable time there is more loss in this way than can well be afforded. About half a dozen of the most promising we remove into the forcing house early in October, and some others in January. As already remarked, the difference between the quality of the Grapes produced by the last batch of Vines as compared to that from the first is so great as to make it difficult to believe that the Vines were all treated alike, the early forcing sacrifices so much.

The above notes on growing Vines in pots are not intended to represent the whole course of culture, but simply to justify the system of growing the plants for this purpose in two years instead of one, as insisted on by some who have greater means at command, the trouble in wintering being very small indeed; in fact, it is on the ground of saving trouble that the two-year

system is recommended, as the small plants of the first year that may be in 24 or 16-sized pots may be simply kept from severe frosts and heavy rains before Christmas. After that time they will be wanted to commence their growth in the forcing house, for, be it observed, it is for the purpose of getting them into growth early, and consequently ripened early, that a good rest is secured before they are started again in the autumn. The fact of having a well-rooted plant to begin with at a time when others have simply the unrooted cutting, must assuredly be held as giving a good start, and such start has in my practice always carried itself out to the end. Under these circumstances I have no hesitation in recommending it, leaving it to others who are satisfied with having their Grapes ripe by the middle or end of May and later to grow them in one year if they choose, and this they may easily do; but where fruit is required six weeks earlier than the above time, the difficulties in the way of their being forthcoming with one-year-grown canes is such that I would hardly advise the inexperienced to depend on these.—J. ROBSON.

### ROSES THIS SEASON.

LITTLE has been said lately about Roses, I therefore offer the following. Etienne Levet and Claude Levet are both handsome smooth-petalled Roses, but as yet, when fully expanded, they have not been full enough in the centre. When expanded they show a yellow eye. If they are taken to an exhibition the blooms must be cut previous to expansion. Countess of Oxford, Madame Creyton, Edward Morren, Perfection de Lyon, Alice Dureau, Louis Van Houtte, Maréchal Niel, Marie Rady, and Alfred Colomb are the best exhibition Roses of late years. They are perfectly full in their centres, and good growers. Baron Chanrand is lovely and perfect, but not large. I have twenty plants in one bed now in full and abundant bloom. Maxime de la Rocheterie is splendid, as Mr. Van Houtte has said. I have thirteen plants of it now in abundant bloom. It is a full-sized frilled rosette, of rich crimson-purple colour. It is a good grower, and when fully expanded does not show an eye. It is in the way of Empereur de Maroc, but much larger, and of erect habit. Baron de Bonstetten is a good grower, and I think it will be quite equal to Louis Van Houtte. The colour is much the same. Clémence Raoux is a very neat nice Rose. Abbé Brammerel is a capital bedder. Its shape is a bombed rosette. Its colour is dark-shaded crimson. It is evidently from Eugène Appert. Perfection de Lyon I fear is not a late bloomer.

The Roses are abundant and very fine here; I never had them finer. I must not forget to say a word about Vicomtesse de Vézins; it is (thirteen plants) a most abundant bloomer; the form is expanded, and full to the centre. It is a red Baronne Prévost, very hardy, and a most effective garden Rose. Edward Morren is magnificent here. The last two are the hardiest of late years, and good growers.—W. F. RADCLIFFE, Okeford Fitzpaine.

### THE KITCHEN GARDEN.—No. 9.

THERE was a time, now many years ago, when various materials, such as wood, flint, stone, and even mud and clay, came into competition with brick for the construction of garden walls. At such a time it might have been profitable to have entered into a discussion on the respective merits of each; for although bricks were used in those days, the business of making them was only in its infancy, and the facilities for conveyance from one locality to another were not so fully developed as now. Wooden walls or fences have long been in use, but are gradually becoming less common. Trees grow well, and bring fruit to high perfection when trained against them, but the material is not durable enough, and is only to be recommended on the score of economy. Flint walls are not often used for fruit trees, though in some counties they are common for other purposes; there is considerable difficulty in training the trees against them, although they have been known to ripen fruit tolerably well. Mud or clay walls are not suitable for garden purposes, and in my opinion ought not to be thought of, as they would prove to be the worst of any, and they are liable to crumble to pieces after frost. Stone for walls is more durable than brick, but not so warm. However, it must not be shut out altogether, as it may be used in conjunction with brick to very great advantage. For instance, the foundation may be formed entirely of stone, or, where bricks are scarce, the body of the wall may be built of

stone, and afterwards faced with bricks. Next, we have walls built of concrete, and faced with some hard substance such as cement. This system is on its trial, and is now being adopted by many, but how it will answer for fruit-growing has not yet been conclusively proved. I have had some experience with the plan, and hope soon to refer to it again fully in a separate paper. I believe it is cheaper than brickwork, but not so durable. The plan is very expeditious, as by it a wall may be very quickly built up. It has rather a fancy appearance, and for a handsome or ornamental residence where all surrounding buildings are executed in a fancy style, a garden enclosed after this plan will be very appropriate; but up to the present time I am unable to recommend to amateurs anything more suitable than a good substantial brick wall. Such walls are lasting and neat, warmer than anything yet in use, and most suitable for the training of trees securely and to the required form. As before stated, where stone is more plentiful than bricks much of that material may be worked in, and yet be as strong as if all were bricks, though it might involve a thicker wall, owing to the uneven proportions of the stone.

After the material is decided upon, it will be necessary to determine the height and thickness of the wall. The one ought to be in proportion to the other, the higher the wall the thicker it ought to be. Walls are seldom less than 8 feet nor more than 12 feet in height above the surface of the ground; for the former height it is proper to have them 14 inches in thickness, but if higher 18 inches or even more will leave them sufficiently strong. I dislike to see a wall supported by buttresses or pins; these take up the room, and do not look so well. These are things worth thinking of in connection with an amateur's garden of an acre. I do not approve of very high walls for small gardens; if a high wall is wanted let it be on the north side; indeed, it will most likely be an advantage to have the walls of different heights, particularly if the garden is on a level. In this case the north wall ought to be the highest, say 10 feet, the east and west wall 9 feet, and the south wall 8 feet. The garden will not then look so heavy, and will be much better for the crops growing inside; but should the ground be on a gentle slope the difference in the height of the wall will not be so necessary.

Take care that first of all good and sound foundations are put in; they should be a few inches wider up to the earth's surface than the rest of the wall in order to render it more secure; and I need hardly mention that at all doorways or other entrances the wall should be considerably thicker, in order to give it extra strength.

The next thing to think of is to provide the walls with a good coping, which should be as substantial as that of the wall. These necessities have been treated of previously, and by referring to the illustrations given of various designs a suitable one can be chosen. A coping is necessary for the proper protection of the wall, and for a 10-foot wall it may project 6 inches on each side—not quite on a level, but sloping a little so as to throw off the water. This is for the protection of the trees growing on the wall as well as the wall itself. This is to be regarded as a fixed coping. The top or main coping for a substantial brick wall ought to be of paving stone shaped out highest at the top and sloping to the sides, to carry the wet off. These are the most durable copings of any, and may be obtained in lengths of 2 or 3 feet, so as to have as few joints as possible along the top of the wall.—THOMAS RECORD.

### NOTES ON FROST AND ITS EFFECTS.

I ALWAYS—in common, doubtless, with most of your readers—peruse with pleasure and profit the communications of my friend Mr. Robson. But I must ask permission to object *in toto* to the first eleven lines of his very interesting article upon the above subject, and to show that those whom I hold to be worthy of the terms “scientific men” and “philosophers,” do not act in the strange way which he describes.

If Mr. Robson will some day devote five minutes to the meteorological instruments in the herbaceous garden of the Royal Botanic Society, which were erected as a typical set for the gardener's use, he will find that arrangements are made for the detection of the two classes of frosts—air frosts, and grass or radiation frosts; the former by a thermometer screened from radiation but freely exposed to the air, and the latter by a thermometer resting upon and almost forming a portion of a grass plot. This grass thermometer will in promptitude of action leave all my friend's “wet mats,” &c., far behind, and is an exact quantitative measure of the grass itself, and of

similarly-foliaged plants in its vicinity. The upper or air thermometer shows the lowest temperature of the air at that height (4 feet), above the ground, where, as every gardener ought to know, it is often 5° or 10° warmer than on a grass plot.

As for a “scientific man” putting a mercurial minimum, or, indeed, any thermometer, on a window-ledge and booking the result, I can only say that I should like to catch anyone doing so, and that I hope the sun caught the thermometer and burst it.—G. J. SYMONS.

P.S.—If any of your readers would like to see engravings and descriptions of the instruments and arrangements above mentioned, I shall be glad to forward the same on receipt of a line addressed to me at Camden Square, N.W.

### THE ELECTION OF ROSES.

IN spite of the unkind season which threatens, at any rate with us, to give few Roses worth looking at, I wish to state as early as possible what I propose to do this year, with the consent of the reigning powers at 171, Fleet Street, in reference to the election of Roses.

Last year's election was of the comparatively new varieties, whilst many of our old friends were of course unmentioned. It seems but fair this year to see how far these latter keep up their positions, and therefore I propose this year to hold a “general election.” The poll will be declared as soon after the blooming season as I can possibly make out the lists, but I propose to hold the poll open till the last day of August. The one question to which I invite replies will be this, Name what you consider the best fifty Roses in cultivation, and of these underline the twenty you consider to be the best of those best.—JOSEPH HINTON, *Warmminster*.

### THE SEASON.

FROST ON 13TH JUNE.—I briefly noticed last week another instance of the vicissitudes of our season—namely, a frost on June 13th. The weather had been very fine and warm the greater part of the month up to the 10th or 11th, when the wind veered round to the N.E., and was very cold night and day, with a bright sun shining during the latter part of the twenty-four hours. On Saturday morning there was, as remarked, an unmistakeable frost between four and five o'clock in the morning. The wind was very dry, so that I could not trace any effects of frost on damp mats and similar materials, but at places a few miles from here the frost was more severe. Assuredly such unusual weather must be very injurious to vegetation. The long continuance of cold north-east wind is alone productive of an immense amount of harm to all kinds of crops, checking everything; and the prospects of the fruit-grower which at one time were most promising, are now just the reverse. The cold weather up to May 22nd having been followed again by a cold period in the middle of June, a great deal of fruit has fallen off, while the unkindly look the trees present, with the encouragement given to vermin, leaves but scant hopes of a crop, and every day makes matters worse. At the time I write, the evening of the 15th, the wind blows more like March than June, and grass and all other crops begin to assume that bluish tint which everyone knows is the ruin of a healthy state of things. Water for domestic use is also, I am told, scarce in places.—J. ROBSON.

I CAN, in a measure, confirm the remarks made by Mr. J. Robson on frost and its effects. I live in a valley in the south of Kent peculiarly subject to late frosts. We had a sharp white frost last night (June 21st), and little more than a week ago water congealed when exposed out at night in pans. Potato crops belonging to my neighbours have been sorely cut up and blackened. All along this valley Potatoes, Peas, and Beans show signs of severe damage. I am but a few feet higher than my neighbours, but I have a belt of trees to the east and north; this not only protects my kitchen garden from the keen north-east wind we have been having for the last month, but keeps off “the fever.” The morning sun does not, in the case of my kitchen garden, act upon the vegetable plants until the frost has disappeared, consequently my Potatoes look healthy, whereas unprotected crops of my immediate neighbours are all drooping. The damage done by cold cutting winds is, I suspect, even worse than by late frosts. Last night the wind was so cold that my gardener tells me he was glad to jump

into bed by nine o'clock, as he could not keep himself warm outside, and there was no fire inside his house.—S. N. MARTIN.

### THE WINTER MOTH.

SOME reference has already been made in these pages to the above insect, which, though bearing a name which is not a "sound of dread," is yet a troublesome species, and one not easily mastered. This season, which seems to be a "jubilee year" with certain kinds of blight in our gardens, has produced some strange manifestations of activity and odd changes of diet on the part of some insects, and I have been a little surprised to find the larvæ of the Winter Moth (*Cheimatobia brumata*) attacking the Rose. Of course, in theory, one would not be surprised at its visiting other Rosaceous plants, from its well-known partiality to the Hawthorn in our hedges; but it more generally, when it enters the domain of the garden and orchard, singles out fruit trees as the object of its attack, being sometimes very hurtful to the Apple, Pear, and Plum, and occasionally also stripping the Filbert. Indeed, the larvæ have such a convenient appetite, that a list of all the trees on which they can feed would be a long one; still, as they appear to show a preference for trees or shrubs, I hardly expected to find any upon dwarf Rose trees. It is to be hoped this new taste will not extend itself, for the poor Rose has already a *quant. suff.* of insect and vegetable enemies to contend with, and might adopt as its motto the oft-quoted epitaph, "Afflictions sore long time I bore;" though, fortunately for the plant, modern physicians are not so much in vain as their predecessors of fifty years since, for if there is anything in which we can show a marked improvement it is in the culture of the Rose.

A few further notes on this pest, *Cheimatobia brumata* (fig. 1), may be of service to others besides Rose-growers. The larva is one that needs to be looked after. It does not, like some of the enemies of the gardener, parade itself in our view, as if to say, "See what mischief I'm doing." The larva very ingeniously draws together a few leaves with silk, so as to hide itself from view, usually feeding under this shelter. The abode is so slight that it does not attract the eye in many instances; and as each larva dwells alone, there is none of the conspicuousness of the nests constructed by other leaf-devourers, such as the small Ermine (*Yponomeuta padella*). The larvæ of this species is one of the very earliest to come forth; and, less fortunate than some of our insect pests, which defy the colds of spring, these often suffer severely from the frosts of April, which kill whole broods, and so serve to keep their numbers somewhat in check. The survivors fall to upon the leaf-buds, and thus do more damage than larvæ which, coming forth from the eggs at a later date, devour the leaves of plants when they have fully expanded. One of Nature's remedies for this evil is the visitation of small birds, which seek out the young larvæ of *C. brumata* for their own sustenance and that of their nestlings. Mr. Newman, in some valuable observations upon this moth communicated to the *Field* newspaper, states that the bullfinch and the titmouse are especially given to seek out the larvæ; but if it be true, as some observers report, that the bullfinch, like the goldfinch, is getting very scarce with us, we shall not have much help henceforth in that way. Though

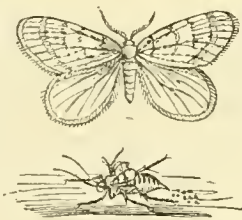


Fig. 1.—*Cheimatobia brumata*.



Fig. 2.—*Yponomeuta padella*.

our small birds, Mr. Newman admits that the feathered hunters of the larvæ of *C. brumata* in their eager search open and destroy a great many buds which contain no larvæ. A small species of Ichneumon Fly deposits its eggs upon the larvæ of this moth, and the grubs kill a certain number of them; but they are not largely reduced thereby, and as yet the history of this parasite has only been partially worked out.

An inveterate foe of the Winter Moth belongs to the same order of insects, being the species designated the Dun-bar (*Cosmia trapezina*), the larvæ feeding in May and June on the Hawthorn, Hornbeam, and Oak, and having a taste for animal as well as vegetable food. No doubt the abodes spun by the larvæ of *C. brumata* serve for their partial protection from the voracious and larger larvæ of *C. trapezina*, and even in a chase along a twig, Mr. Newman found the Geometer, though furnished with but ten legs, would sometimes escape the Noctua with its sixteen. Also *C. brumata* drops readily from a leaf or branch by a cord of silk, an expedient at which *C. trapezina* is not so apt. Of the proceedings of the latter Mr. Newman writes—"It is curious to observe that he does not seize the caterpillar by the hinder part of the body, but never slackens his pace until his head is abreast of the other's neck, which he then seizes with savage eagerness, reminding one strongly of a deerhound pulling down a stag, or at least the representations of this cruel feat by the inimitable Landseer. When the first paralyzing grip is given it is all over with the leaf-feeder—there is scarcely a struggle." It would be of advantage to us if the larvæ of *C. trapezina* frequented gardens and orchards; but they do not very often follow their favourite prey to those situations, preferring woods and hedges. If the horticulturist wishes to operate upon this enemy while in the larval condition, there are only two feasible ways—either careful hand-picking, which is not so easily done in the case of trees; or agitating the twigs and branches with sufficient force to cause the larvæ to drop by threads, when they may be caught or crushed at once.

It may be noted that the favourite posture of this larva when nearly adult is with the body partly bent. In colour we find great variety in different specimens. Some are a deep brown, others quite a light green. The ordinary appearance of the larva is between the two—somewhat of a dull green tint, with stripes of white on the sides, and down the back a darker stripe, supposed to be produced by the food in the alimentary canal being seen through the skin; the claspers and legs are semi-transparent. Most of these are adult in May or the beginning of June. As the larva descends to the earth, and there inters itself to become a chrysalis, a thorough digging of the ground beneath trees that have been attacked has been advised. This kills some, and exposes others to be killed by the sun or by bird and insect enemies; still, it cannot always be carried out.

The German plan of proceeding by way of anticipation is best; the trees or shrubs being daubed with rings of a composition consisting of equal parts of Stockholm tar and cart-grease, in such situations on the trunks or branches that they will be likely to intercept the female moths in their march upwards to deposit their eggs: for as these are wingless, their only way of getting up in the world is to crawl, and they are thus entangled and killed by the sticky compound while endeavouring to reach spots suitable for the deposition of their eggs. It has been ascertained that this preparation does no harm to trees when smeared on moderately in November and December, just at the time the Winter Moth emerges. Those, however, who have experimented with it in the spring with the idea of killing other insects, have found injury result. A great many moths may be taken by examining the trunks with a lantern at dusk as soon as the emergence has begun; and since, in spite of all precautions, eggs are sure to be deposited here and there, these greenish masses should be looked after in the crannies of the stems any time between Christmas and April.—J. R. S. C.

MIDLAND COUNTIES GRAND HORTICULTURAL EXHIBITION.—We are authorised to announce that, with a view to accommodate intending exhibitors of plants, fruits, vegetables, Roses, &c., at this important Show, the last day for making entries has been fixed for Saturday, the 27th inst., instead of the date announced in the schedule. Entries should be sent direct to Mr. H. G. Quilter, the Lower Grounds, Aston Park, Birmingham, and should state the classes in which it is intended to exhibit, and the superficial measurement in square feet of space required. Competitors for either of the silver challenge cups must deposit a sum of £2 at the time of making the entry. These deposits will be returned on the morning of the Exhibition to such exhibitors as duly stage their exhibits. The programme of conditions and arrangements for the lawn-mower contest are now in circulation. Arrangements have been made for holding a public dinner, at 6 p.m., on the second day of the Exhibition, at the Lower Grounds, Aston Park, Birmingham, which will be presided over by the Mayor of

Birmingham (J. Chamberlain, Esq.), in order to afford exhibitors and horticulturists generally an opportunity for social intercourse. As only a limited number of persons can be accommodated, early application for tickets should be made direct to Mr. Quilter.

### NOVELTIES IN THE ROYAL GARDENS, KEW.

In the Succulent house, *Leuchtenbergia principis*, the most remarkable of all Cacti, is again producing flowers, of which the position has been a matter of doubt, probably through the mistake of an artist, tab. 4393, of the "Botanical Magazine," published a quarter of a century ago, where it is also erroneously described as being axillary. Most people are rightly convinced of their being borne at the top of the mammæ, a little on the inner side; but so recently as 1868, M. Lemaire, an authority on succulent plants, in "Les Cactées" repeats the error of describing them as axillary, and in a foot-note remarks with surprise that the flowers have been said by a nurseryman and an amateur to proceed from the summit of the mammæ. He assumes them to have been abortive, and further says that he has seen flowers, "sur des podaires du céphalon de deux *Mélocactes*, et dans ce cas, et dans le précédent, la fleur est également abortive." Perfect flowers have, however, been produced often enough under the observation of different people to show without doubt their normal position, and though exceptional it is not without parallel. *Erythrociton Hypophyllanthus* of Rutaceæ, native of New Grenada, bears its flowers on the midrib at the back of the leaf. "The position of the flowers upon the midrib of the leaf varies, as they are sometimes produced not far above the petiole, and are often subtended by a second leaf, the upper surface of which faces the back of that from which they both spring."—(Dr. Hooker, "Bot. Mag.," vol. xvi.) *Phyllonoma* (*Dulongia*) *acuminata*, of Humboldt (*Saxifragæ*), a Mexican plant, bears its flowers on the upper surface of the leaf, on the midrib. *Helwingia japonica* (*Araliaceæ*), of Japan and the Himalayas, sometimes seen on garden walls, is another instance. The *Leuchtenbergia* may be considered analogous to the above cases, though there is no relationship. The mammæ of *Mammillaria*, &c., represent leaves according to some authorities. Lemaire devotes a chapter to them, and says, "Que toutes les Cactées ont des feuilles." There is, I think, no reason why they should not support flowers in this condition equally well as in the above. *Echinopsis cereiformis* is another plant of interest here in flower, more common, however, than the last, and more easily grown to perfection. It has long been known as *Stapelia cylindrica*, "a genus with which it differs most widely." It was figured and described by Dr. Hooker in the "Botanical Magazine" three years ago, from whom the above is a quotation. M. Decaisne also about the same time gave it the name *Apteranthea tessellata*. It has long, cylindrical, green, ridged stems, bearing small campanulate flowers near the summit. It is an excellent mimic of *Euphorbia mammillaris*, of which select a good branch, and it would require consideration to distinguish them by sight; flowers, leaves, and spines, of course, either absent or removed. *Dasylicon glaucum* and *D. acrotrichum* (see page 422), are now in bloom, the former male, and the latter female, so that seed may, perhaps, be perfected.

In the stove *Hoya longifolia*, a species but rarely cultivated, is very pretty in a basket, and is suitable for that and similar purposes. The branches are slender and pendulous, the leaves long, narrow, and very fleshy, with flowers similar to those of *H. bella*, but with less colour in the centre. Underneath, *Pavetta odorata*, a plant of little beauty but delicious perfume, is scenting the entire end of the house.

In the Orchid collection about one hundred species are in bloom, the majority of which are chiefly of botanical interest. Among others recently open are *Cypripedium niveum*, *Dendrobium Bensoniæ*, *Phalænopsis cornu-cervi*, and *P. Wighti*, *Angraecum falcatum*, and *A. distichum* (the latter does not often find a place in choice collections; it is in this case very pretty, having numerous stems covered with green shining leaves, each bearing several small pure white flowers); *Catasetum fimbriatum*, and *C. mentuam*; *Cattleya Forbesii*, *Epidendrum cinnabarinum*, *Kefersteinia graminea*, and *Peristeria pendula*.

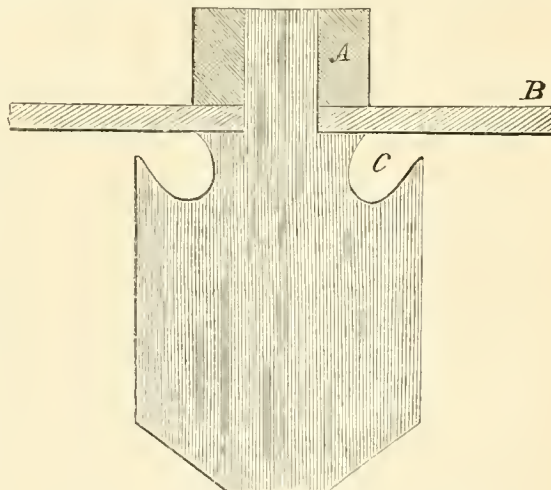
*Cypripedium spectabile* is in flower at the rockwork. Of all Orchids there is scarcely to be found one more lovely, with the special advantage of being so easily cultivated. It requires heat with good drainage, and when growing a certain amount

of moisture. With these conditions it will grow almost anywhere, and would have a fine effect in the front of American plants. Also in flower are *Papaver alpinum* var. *album*, a very pretty variety; *Dianthus vaginatus*, a distinct species with brilliantly coloured flowers; the new *Sempervivum tectorum* var. *atlanticum*—it was brought from the Greater Atlas by Dr. Hooker in 1871, flowered for the first time last year, and was figured in the "Botanical Magazine." It is one of the most distinct of the hardy kinds in cultivation. The leaves are hairy on both surfaces. A few rosettes have longer leaves on one side than on the other, but that is probably accidental. There is also *Allium azureum*, with a dense head of blue flowers.\*

In the herbaceous ground are—*Allium polyphyllum*, leaves and stem glaucous, with lilac flowers; *A. Moly*, one of the most striking, bearing a profusion of bright yellow flowers; *A. sub-hirsutum*, white; and *A. odorum*, distinct and sweet-smelling, without the usual alliaceous odour. *Lilium Martagon* var. *album*, is a fine companion for the species, and is very ornamental. *Helichrysum orientale* is a valuable Ever-lasting of dwarf perennial habit, bearing corymbs of numerous small yellow flowers, the eye not perceptible. *Campanula pulla* is in fine condition, and is one of the best. The flowering branches of *Habitzia tamnoides* are extremely elegant, and would be very useful where wreaths of any kind are required. The Siberian *Astragalus alopecuroides* forms a handsome specimen; the long pinnate leaves are retained to the base of the plant, and in the axils of all but the lowest are borne roundish spikes of yellow flowers; the height is about 3 feet. A patch of *Silene alpestris*, about 2 feet over, is densely covered with white flowers. It has a choice appearance, with a most robust constitution. The new *Aquilegia leptoceras* var. *chrysantha*, appears to be no less floriferous than its congeners, and from its colour is a valuable acquisition. It is the last figure in the "Botanical Magazine" of 1873. *Kniphofia* (*Tritoma*) *caulescens*, noticed last week, is a native of the Storm Bergen mountains of Albany, South Africa, not United States of America, as was by mishap recently given in a contemporary. The genus is exclusively African.

### GLAZING WITHOUT PUTTY.

I INTENDED to write when first the description of "Glazing without putty with the aid of cork wedges," appeared in "our Journal," but illness prevented.



A, Fillet of wood.

B, Glass.

C, Groove.

I have a house 15 by 11 feet, span-roofed, glazed without putty. The glass is simply held in the rebates by small fillets of wood bradded on to the rafters, which are  $2\frac{1}{2}$  by  $1\frac{1}{2}$  inch; the glass 20 by 14, and 21-oz. The cork would, doubtless, be a great improvement.

There is a peculiarity in the form of the rafter to which I wish to draw attention, as it quite does away with the diffi-

\* *Triteleis Murrayana* has been altered to *T. laxa*; it is the same precisely. *T. crystallina*, now out of flower, is perhaps the same also; in any case it is not a correct name. *T. laxa* has a very long gynophore, or stalk to the ovary.

culty of leakage mentioned by your correspondent, "V." It also possesses the merit of carrying off the moisture condensed upon the inside of the glass. All grooved rafters or bars that I have seen used for glazing without putty, appear to me to be faulty, inasmuch as both edges of the groove are in contact with the glass. Now by my plan this is not the case, as the accompanying sketch will show. Condensed moisture mostly finds its way to the rafter before dropping, and in this form of rafter it runs into the groove, down it, and out into the external gutter.

The house has stood the test of two winters, and answers admirably; it cannot leak, and there is no drip. The glass was taken out last autumn, the rafters well painted, one coat in one day, and the glass returned to its place next morning. Surely this is an advantage, and it seems but reasonable to suppose that when the rafters can be so thoroughly painted they must prove more durable than when putty is used, which always cracks more or less, and allows wet to soak in.—T. J. A.

## CRYSTAL PALACE ROSE SHOW.

JUNE 20TH.

OWING to the extraordinary character of the season the hopes of rosarians were in a considerable degree doomed to disappointment on this occasion. The competitors were few in comparison to those who in other years tried their fortunes at Sydenham, and those few were southern growers, though there were two or three who hailed from as far north as Cambridgeshire. What chance any northern man would have stood may be inferred from the fact that the bulk of the Hertfordshire Roses will not be fit for exhibition till near the middle of July. Yet the wonder is not that there should have been a smaller show than usual, but a show at all; still, there was a show, and that of no mean pretensions and beauty. Mr. Wilson made an innovation in the arrangement by placing the table decorations along the centre, and the cut Roses at the sides instead of along the centre as heretofore, with the object of doing away with the monotony which long lines of cut blooms invariably present when viewed collectively and not individually, and it much improved the general effect, especially as it admitted of ornamental plants being more freely introduced than hitherto. Although on the whole the trusses were not so fine as usual, there were, nevertheless, scattered in the various stands numerous excellent blooms.

In Class 1, for single trusses of seventy-two varieties, Mr. B. R. Cant, of Colchester, carried off the first honours with, among others, fine examples of *Mlle. Marie Rady*, *Elie Morel*, *Prince Camille de Rohan*, *Madame Hippolyte Jamin*, *Edouard Morren*, *Thoin*, *Nipheto*, *Maréchal Niel*, *Dupuy-Jamin*, *Louis Van Houtte*, *Colonel de Rougemont*, *Madame Lacharme*, *François Michelon*, *Maurice Bernardin*, *Annie Laxton*, *Marguerite de St. Amand*, and *Madame Bravy*. Second came Mr. Turner, of Slough, with *Duke of Edinburgh*, splendid; *Triomphe de Caen*, *Jean Lambert*, *Denis Helye*, *Clémence Joigneaux*, *Monsieur Boucenne*, *Xavier Olibo*, *Exposition de Brie*, *Maréchal Niel*, *John Hopper*, *Charles Lefebvre*, *Marie Baumann*, and *Louis Van Houtte*. In the stands of Messrs. Mitchell, of Pilt-down, Uckfield, we noticed *Sénateur Vaisse*, *Pierre Notting*, *Souvenir d'un Ami*, *Josephine Malton*, *Gloire de Ducher*, *Devoniensis*, *François Michelon*, *Edouard Morren*, *Marie Baumann*, *Baroness Rothschild*, and *Souvenir d'un Ami*. Mr. J. Crauston, King's Acre, Hereford, was fourth.

In Class 2, for forty-eight trebles, Mr. Turner was first with a collection comprising grand trusses of *Lord Napier*, *Edouard Morren*, *M. Paul Neron*, *Vicomte Vigier*, *Victor Verdier*, *Alfred Colomb*, *Marquise de Castellane*, *Countess of Oxford*, *Louis Van Houtte*, *Dr. Andry*, *Maréchal Niel*, *Exposition de Brie*, *Prince Camille de Rohan*, *John Hopper*, *Xavier Olibo*, *Elie Morel*, *Marie Baumann*, *Lafontaine*, *Duke of Edinburgh*, and *Mlle. Eugénie Verdier*. Mr. Keynes, of Salisbury, came in second, and Mr. Cranston third.

In the next class, for twenty-four trebles, Mr. G. Prince, Market Street, Oxford, took the lead with excellent stands, containing *Mlle. Etienne Levet*, *Prince Camille de Rohan*, *Madame C. Wood*, *Horace Vernet*, *Marie Baumann*, *La France*, *Anna de Diesbach*, *Baroness Rothschild*, *John Hopper*, and *Xavier Olibo*. Mr. Turner was a good second with *Duke of Edinburgh* in splendid condition, *Countess of Oxford*, *Paul Neron*, *Louis Van Houtte*, *Edouard Morren*, *Exposition de Brie*, *John Hopper*, *Marie Baumann*, *Monsieur Boucenne*, &c. Third came Mr. Cant.

For twenty-four singles Mr. C. Burley, Brentwood, took the lead, Messrs. Lee and Durbin following.

In the amateurs' classes there were several remarkably good exhibits. Foremost in the leading class, for forty-eight single trusses, was the Rev. J. B. Camm, Monckton Wyld, Charnmouth, in whose stand we noted *Antoine Ducher*, *Alfred Colomb*, *Augustine Newman*, *Annie Wood*, *Marie Baumann*, *Maréchal*

*Niel*, *John Hopper*, *President Thiers*, *François Michelon*, good wherever shown, and *Mias Ingram*. Mr. Farren, Crescent, Cambridge, came second, showing several of the above in fine condition; Mr. Ingle, gardener to Mrs. Round, Colchester, third; with the Rev. G. Arkwright, Pencombe Rectory, fourth, all of them well deserving their honours.

For thirty-six the prizes went to Mr. Chard, Clarendon Park Gardens, Salisbury; Mr. T. H. Gould, Mortimer Rectory; Mr. Ingle, and the Rev. G. Arkwright. Those for twenty-four were taken by Mr. Quennell, Brentwood; Mr. T. Graveley, Mr. J. E. Cavell, Mr. J. L. Curtis, Chatteris; and the Rev. J. B. M. Camm; whilst for twelve Messrs. Pearce, Soder, and Smallbones were the competitors who carried off the chief honours.

For twelve trusses of any new Rose of 1872, Messrs. Curtis, Sandford, & Co., Devon Roseries, Torquay, were first with white Hybrid Perpetual *Madame Lacharme*; Mr. Prince, Oxford, second with *Pierre Seletsky*. All the prizes for the collections of twenty-four Roses of 1872 and 1873 were withheld, and altogether this was, perhaps, the least interesting part of the Exhibition.

The best twelve blooms of any variety were *François Michelon*, from Mr. Keynes, and in other parts of the Show this Rose well maintained its title to the position; the second best *Maréchal Niel*, from Mr. James Mobay, Cuckfield; third being *Louis Van Houtte*, exceedingly fine, from Mr. Turner.

Collections of yellow Roses were unusually few. Mr. Quennell, of Brentwood, stood first with *Gloire de Dijon*, *Maréchal Niel*, and *Céline Forestier*, showing remarkably fine trusses; second Mr. F. Mann, of Stisted, Braintree; and third Mr. J. Webb, Esq., Culham House, Reading, the last-named showing, besides *Maréchal Niel*, richly coloured clusters of the charming little *Persian Yellow*.

Among miscellaneous subjects of exhibition we noted a splendid group of pot Roses from Mr. Turner, of Slough, forming a most appropriate centre to Mr. Wilson's arrangement; nicely arranged groups of plants from Messrs. Downie, Laird, & Laing, and Mr. Ley, of Croydon; Pinks, Pansies, Pyrethrums, and Ranunculuses from Mr. Hooper, of Widcombe Hill, Bath; Fern cases from Messrs. Dick Radclyffe & Co., and Mr. J. Bromwich, Victoria Buildings, Belgravia; and groups of Ivies, for which prizes were offered, from Messrs. Lane, of Berkhamstead, Mr. Turner, and Jenner Weir, Esq., Blackheath. Mr. Tanton, Epsom, sent a cut specimen of *Lilium Humboldtii*; and Mr. Turner, of Slough, had certificates for *Pelargoniums Constance*, *Presbyter*, and *Duchess of Cambridge*.

THE office of a judge, while giving one facilities for seeing the flowers at an exhibition, does not help one to take such detailed notes as it is possible to do when less occupied. I have, therefore, but to make a few general remarks on the Show. Roses were not up to the average. This was not to be expected, the marvellously unfavourable season that we have had, especially in some places, the late frosts, cold cutting winds, and sunless days, were sadly against the flower; and when I mention that one Rose-grower, whose culture is numbered by acres, could not put in an appearance in any of the classes, I have sufficiently indicated, I think, the difficulty, and the character of the season. Some good boxes there were certainly, but there were none of super-excellence, and the general run of the flowers was below par.

The class for new Roses was very small, and as the old warfare is still waged as to whether a Rose is considered to be in commerce when it is sent out in France, or when it is really so—when the English growers have propagated it, and are ready to distribute it—i.e., in the spring following, it is now a question whether it would not be better to discontinue these classes altogether. The Roses are never up to the mark—i.e., take either of the two boxes of twenty-four, and place them alongside of the third or fourth-prize box of twenty-four in the ordinary classes, and their inferiority would be manifest. Moreover, if the new Rose be undeniably a good one, we have little chance of seeing it. For example, the best Rose of the season is said to be *Captain Christy*, but we shall look in vain most likely for a bloom of this Rose. Growers will be too anxious to propagate it, and hence it will not be allowed to bloom. I should say, and in this I know I shall be supported by most exhibitors, Do away with the class altogether. There were, as I have said, but two exhibits, and in both of them were flowers about which disputes might arise according to the interpretation given of terms, "new Roses" of 1872 or 1873.

Table Decorations were very good, and the effect of the teaching of the last few years was visible in the fewer violations of good taste, and in the general simplicity of the decorations. Modifications of the March stand were used in the greater number of the tables, and were generally well arranged. There were, however, a few things that require, I think, alteration. Thus, in one stand I noticed that single flowers of *Delphinium* had been tied on to Grasses, and placed in the vases; of course, in a few hours these would be nowhere, and the thing was too artificial to be in good taste. Then there were in some cases too many

Fern leaves sprawling over the table; and indeed, as was observed, it would be much better if the stands did not quite rest on the table, and so allow the Fern leaves to droop instead of being flat. I cannot but think, too, that simplicity in too many cases degenerated into poverty, and that as most dinners take place by gas or candle light, it should have been remembered that very many of these tables would look excessively poor, when the mauves, lilacs, and blues would be so completely altered. On the whole, however, we have evidently progressed, and the continual insisting upon certain rules has had its effect. We have, too, I hope, seen the last of the barbarism of having plants inserted into the table. The Manager of the Crystal Palace made this a positive disqualification, and the result has been that it has been found out that Palms can be used without this. They are taken out of the pots, and the roots spread out into moss and fastened, and in this way can be utilised without the loss of the plants.—D., *Deal*.

## ROYAL BOTANIC SOCIETY'S SHOW.

THE last Exhibition for the season took place yesterday, and both plants and fruit were fairly represented; the former, however, not in such numbers as at the May show, of which we remarked it was the best the Society had had for some years. We have, however, to notice with regret that one drawback which has been of long standing at these shows—the tardiness with which the awards are affixed to the competing groups, still continues, and although the fruit Judges had given in their decisions quite two hours, there was not a single prize card affixed when we left.

In the plant department Mr. B. S. Williams sent a fine group of six stove and greenhouse plants, taking the first prize in the nurserymen's class. It included a splendid specimen of *Anthurium Scherzerianum*, with *Dracophyllum gracile* and *Allamanda Hendersoni* in fine bloom. The same exhibitor had also a group arranged for effect, which took the first place in its class, a group of Pitcher-plants of rare merit, and others of fine-foliaged plants. In the amateurs' class for stove and greenhouse plants Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, carried off the first honours. In Cycads Mr. Bull, of Chelsea, was first with a selection from his large store of these. He also exhibited a numerous group of new plants, as did Messrs. Veitch. A fine group of pot Roses from Messrs. Paul, of Cheshunt, was a conspicuous object in the tent; but the star of the Exhibition was a grand plant of *Spiraea palmata* nearly 5 feet in diameter, such a plant as we have never seen before exhibited, nor, size for size, have we ever seen one of this species with such a profusion of its lovely rosy crimson feathers. It was exhibited by Mr. S. Strathan, Waddon House, Croydon. The principal cut flowers were Roses, which Mr. Turner and Messrs. Paul & Son exhibited in their usual good style, the former also sending fine Pinks and Verbenas.

In Fruit there was a goodly array of Pines, among which were Queens of 5 lbs. 10 ozs. from Mr. Miles, and of 4 lbs. 14 ozs. and 4 lbs. 10 ozs. from Mr. Bond; and a Providence of 9 lbs. from Mr. Miles. Of Black Hamburgh Grapes excellent bunches came from Mr. Douglas, Loxford Hall; Mr. Bones, gardener to D. McIntosh, Esq., Romford; Mr. Bannerman, and others. Muscats were generally not ripe enough; the best in this respect, however, apparently being those of Mr. Douglas, who also sent good bunches of Buckland Sweetwater, as did Mr. Johnson, gardener to the Marquis of Ailesbury. Peaches, Nectarines, and Cherries were each represented by a few good dishes.

## READ'S SCARLET-FLESHED MELON.

I HAVE to thank Mr. J. Allan for his remarks on this Melon. We have both given our experience of it. In our Melon houses it sets badly. Planted with him in frames it is one of the best settlers. If this is found to be invariably the case, it will certainly be by far the best Scarlet-fleshed Melon for frames in existence. A somewhat similar result was arrived at with the new Melon Little Heath last year. Forced in heat it was quite uneatable; grown in frames it was very prolific and of good flavour.—J. DOUGLAS.

## EDGINGS.

ENGINGS for walks may be exceedingly various; but there are very few indeed that will give lasting satisfaction. Grass is almost the only one that can be altogether commended for pleasure gardens; and it is one which, if carefully laid and diligently kept, will be sure to please, for it has a good colour, smoothness, regularity, durability when not under trees, and harmony with both the architectural and the vegetable constituents of a garden. It furnishes, likewise, the best ground-tint for setting-off the colours of flowers, as in a flower garden. As an edging, it should invariably be flat, and at an equal

height (not more than half an inch), above the surface of the walk at its margin, with about an inch or even two in depth along the inner line, next the bed or border, to allow for the washing-down of the soil towards it. It must not be too narrow, or it will be difficult to keep out, and the sides will be likely to crumble away.

Box-edgings are troublesome, liable to great irregularities, apt to harbour insects, and suitable merely for quaint figures and old-fashioned geometrical designs. They are the proper accompaniments of parterres and small flower gardens that are laid-out with numerous narrow gravel walks; though near the house, in a truly architectural garden, neatly-dressed stone edgings will be still better. Rougher stone, bricks, thick slates, and tiles, may make strong and durable edgings for kitchen gardens. Thrift edgings, in connection with cottages, are very pretty when perfect. They want replanting, however, every three years, and parts of them frequently perish, leaving the ugliest gaps, where they have been long grown in the same spot, though the plants should be ever so punctually divided and re-set. The dwarf Gentian (*Gentiana acaulis*), if planted in double rows, sometimes, in soils that suit it, makes a neat edging. Heaths, also, particularly the common Ling (*Calluna vulgaris*), may, when properly trimmed, produce an excellent edging for a Heath garden, or a bed of American plants. The smaller Periwinkle, kept in due limits, is useful as an edging under trees; as is the common Ivy. *Arctostaphylos Uva-ursi* will be appropriate in the same position as Heaths, and many varieties of Rock and Sun Rose, though a little too straggling, will supply a novel and consistent edging to a border in which masses of stone and rock plants are freely mingled. The *Cotoneaster microphylla* is likewise suitable, whether on level ground or among rocks, and will bear a great deal of trimming.

The most valuable requisites in an edging are evenness, diminutiveness or capability of being regularly trimmed, quietness of appearance or harmony with whatever is behind it, and permanence. In each of these respects, grass will, in nearly all circumstances, except in the kitchen garden, have the advantage. Where it is least in character is immediately alongside of any rocky surface. There the common Heath, undressed, would be most expressive and characteristic.

Of late years it has become the fashion, in many cases, to put edgings to beds, whether these be filled with dwarf shrubs or with flowers. In respect of beds arranged formally, and occupied with dwarf shrubs, as in regular winter gardens or in peculiar positions on lawns, edgings of some dwarf shrub than the one employed in the centre of each, may help to define the beds more clearly, to impart an additional air of neatness, and to secure greater contrast and variety.

For flower beds, again, the same practice, where a plant of a dwarfier and compacter habit is used as the edging, may be equally suitable; and if a decided change of colour be thus introduced, the effect may become even brilliant. But the system requires to be pursued with judgment and caution, and in reference more to individual beds or small groups than to a regular flower garden.

A degree of quaintness, and an appearance of antiquity, are sometimes attained by surrounding large flower beds on lawns with an edging of some shrub or tree, and keeping this duly clipped. I have seen the common Oak and the Turkey Oak thus applied, and kept at the height of about 9 inches, presenting a dense mass of leaves in the summer season. With the ordinary materials for a hedge—Box, Yew, &c.—or with Ivy, the larger variety of variegated Periwinkle, *Cotoneaster*, Ling, &c., the formation of an edging of this sort would be by no means difficult; though its value appears to me to be at least doubtful.

Ornamental wire edgings of various forms, but generally with the rim curved outwards, are occasionally serviceable in the case of large flower beds, as they may be made the vehicle for displaying several pretty summer climbers that could not in any other way be conveniently placed upon a lawn. The varieties of *Maurandya*, *Lophospermum*, *Tropæolum*, and twin-*Convolvulus*, may be instance as examples of this class.

And it may not be out of place to mention here, that an edging to flower beds composed of rough blocks of Larch or Oak, not denuded of the bark, will, if sparingly adapted, answer a most important purpose, by lifting-up certain of the beds, and thus giving greater elevation and distinctness to the plants in them, besides divesting a parterre or a group of everything in the shape of flatness and sameness. Such beds may be raised 1, 2, or even 3 feet above the others, according to the precise circumstances of each case, and the blocks sur-

rounding them may be vertical, or (as is better), may slope outwards, and may have flowering plants of trailing habits, or simple climbers, dangling irregularly over the sides in summer.—(*Kemp's How to Lay-out a Garden.*)

### FLOWERS FOR OUR BORDERS.—No. 35.

COLLINSIA MULTICOLOR.—MANY-COLOURED COLLINSIA.

EVERY gardener knows how difficult it is to keep up a gay appearance during the sort of interregnum which succeeds the flowering of the spring bulbs, and before the majority of the herbaceous perennials and bedding plants are in bloom. For filling this void the autumn-sown Californian annuals are unrivalled; and, indeed, a succession of sowings would produce throughout the season an effect but little inferior to that obtained by the employment of any other plants.



*Collinsia multicolor.*

One of these is *Collinsia multicolor*. It is quite as robust in its habit as the well-known *C. bicolor*, growing from 12 to 18 inches or more high; and its flowers are among the largest and handsomest of the genus, though their colour is less intense than in one or two older species. The foliage is larger and more coarsely toothed than in *C. bicolor*; but it is chiefly by the purplish tint of its floral leaves or bracts, which add much to the beauty of the plant, that it is distinguished from most, if not all, other species. The bracts beneath the lowest whorl of blossoms are cordate, bluntly toothed, and pointed; the middle ones are much narrower, and without teeth; the upper ones quite abortive. The flowers are on rather long pedicels, which, as well as the calyx, are almost free from glands. The segments of the calyx are very narrow, shorter than the corolla, and three-ribbed. The lower lip of the corolla is lilac, but the pouch-like cavity of the middle lobe is crimson, though externally this tint is hardly visible. The upper lip of the flower is also lilac, but with a large quadrangular white spot in the centre, speckled with bright rosy purple. We retain the name under which this plant was first published, but it is only right to observe that it is now regarded as but a form of *C. bicolor*.

The cultivation of *Collinsia multicolor* is of the easiest description. It is only necessary to sow the seed thinly, in patches, in the open border where the plants are to bloom;

and this may be done any time between the beginning of March and the end of April. As the seeds are comparatively small they must not be too thickly covered with earth, especially if of a heavy adhesive nature. In soils of this character it is a good plan to cover the seed with a little pulverised sandy loam.

Besides *C. bicolor* already referred to, there are several very pretty species well deserving cultivation, the most important being *C. verna*, *C. grandiflora* and its recently introduced variety *violacea*, *C. heterophylla*, *C. corymbosa*, *C. bartsiaefolia* and its variety *alba*, and *C. tinctoria*.

*C. verna* is a very attractive early-flowering species, with the lower lip of the corolla of a sky blue, the upper lip being white. It would doubtless be more extensively grown but for the short-lived vitality of the seeds, which renders it necessary they should be sown in autumn soon after being gathered. From this defect *C. grandiflora* and its charming variety *violacea* are free, though the strongest plants are to be obtained by autumnal sowing, as well as the earliest blooms. The variety *violacea* especially deserves recommendation, the colour of the lower lip being much deeper than in *verna*, and the resulting contrast with the white upper lip more effective. *C. heterophylla* resembles *C. bicolor*, but its flowers are of a darker and perhaps less pleasing tint. *C. corymbosa* is very distinct as a species, with flowers in a capitate cluster and having an abbreviated upper lip, but is less showy and effective than those already named. Nor is *C. bartsiaefolia* worthy of more than a passing notice, its colours being somewhat dull; but its white variety is deserving of more attention than it receives, its colour being pure, and its habit so dwarf that it would be found useful as an edging to taller annuals, though it is, like the rest of the species, comparatively short-lived. *C. tinctoria*, so named from the numerous glandular hairs which clothe the calyx communicating a yellow stain to the fingers when touched, is not yet, we believe, in cultivation.—(*W. Thompson's English Flower Garden, Revised by the Author.*)

### NOTES AND GLEANINGS.

A VERY useful Exhibition is to be held in Paris during September and October, under the auspices of the Société Centrale d'Agriculture et d'Insectologie. It will consist of all the useful insects and their produtions, and of the noxious insects, and examples or evidences of their depredations. Each species is to be shown, when possible, in its several stages of egg, larva, chrysalis, and imago or perfect insect. With those insects common to France or Europe this may be possible, but as the Exhibition will include all known insects, there will undoubtedly be some blanks in the collections. The example thus set, not for the first time, might be followed with advantage in this country.

— THE soil of New Caledonia is said to be well suited for the CULTIVATION OF THE SUGAR-CANE, and we learn from the letter of a French colonist there that the sugar industry is rapidly developing. A company was formed in 1869 to establish a manufactory on the river Tamon. Considerable difficulty and delay have been experienced in the transport of machinery, &c., to such a remote region; but in the end of 1873 the works were completed and commenced operations. Seven other factories are already in course of construction.

— To make a simple and efficient MOUSE TRAP, procure a tolerably tight barrel—a salt barrel with one head will answer—bore a hole near the bottom for a place of entrance; set it in the place where the mice "most do congregate," throw into it an armful of ears of corn and a handful of rags or waste paper to make a nest, cover it so that the mice may "keep dark," and let it stand quietly a few days to give the mice time to colonise, then plug up the entrance. As mice are lively little animals dash in a few gallons of water to moderate their friskiness, then take the game at your leisure; set your trap again, and go on your way rejoicing.

— A WRITER in a French horticultural journal relates his experience of DESTROYING INSECTS:—After sunset I place in the centre of my orchard an old barrel, the inside of which I have previously tarred. At the bottom of the barrel I place a lighted lamp. Insects of many kinds, attracted by the light, go for the lamp, and while circulating around it strike against the sides of the barrel, where, meeting with the tar, their wings and legs become so clogged that they fall helpless to the bottom. In the morning I examine the barrel, and frequently take out of it ten or twelve gallons of cockchafers, which I at

once destroy. A few penceworth of tar employed in this way will, without any further trouble, be the means of destroying numbers of these insects, whose larvæ are among the most destructive pests the gardener or farmer has to contend against.

— It is stated in the Italian papers that the recent hail-storm at Milan was of unusual violence. Many persons who took refuge from it in the Victor Emmanuel Gallery were in great danger from the broken glass which fell upon them, and had to seek shelter in the shops. All vegetation in and about the city suffered greatly, and many birds killed by the hail-stones were found in the streets.

— HORTICULTURAL PROFANITY.—The *Norristown* (Pa.) *Herald* says that a man in Lower Marion wrote to the editor of a horticultural journal, and asked "What are the most advantageous additions to dried Grasses for winter ornaments?" The editor replied: "Acroclinium roseum, A. alba, Gomphrena globosa, and G. globosa carnea." When the Lower Marion man read this he fairly boiled with rage, and immediately sent a note to the editor ordering the paper to be discontinued. He said no editor who swore that way, just because he asked a simple question, should have his support.

— I HAVE seen several queries as to how to DESTROY ANTS, and I give you my experience of fifteen years in New-Mexico, where there are a great many. We have three ways of getting rid of them. 1. If they are where they can be stirred up with a hoe, persistently stirring up the nest every day or two will eventually run them away. 2. Pouring a little coal oil on their nest every few days until they are all killed or have left. 3. Make a mortar bed of their nest, stirring the ants in with the mud, and after having made their nest into mortar carry the mortar away. Either of the three ways will rid you of them if well done; but as perseverance is one of the main characteristics of the ant, those who would get rid of them must also be persistent.

— In some of the papers an allusion is made to the old practice of using CLOTH COVERS FOR COLD FRAMES. These are sufficient for protecting hardy plants, but will not answer for such tender kinds as Tomato, Egg Plant, and Peppers, until very late in spring. They have been tested by our market gardeners and found wanting, as the destructibility of muslin is so easy and rapid they have not been found to pay. The regular glazed hotbed sashes, now made by machinery so cheaply, are much better adapted to the purpose, and last so long that they cannot well be superseded by the cheap contrivances that quickly become, in a manner, useless.

## DEATH OF MR. W. B. BOOTH.

We regret to announce the death of Mr. W. Beattie Booth, a name honourably known in the world of horticulture for half a century. Mr. Booth died at his house in New Road, Hammersmith, on the 18th inst., aged seventy, and will, no doubt, be lamented by a large circle of friends. He was born, we believe, in Perthshire, and at an early age was placed under his uncle, Mr. Beattie, then gardener to the Earl of Mansfield at Scone Palace—the school in which David Douglas, Robert Fish, and other celebrities were trained. On coming to London he entered the gardens of the Horticultural Society at Chiswick, where he acted in the capacity of garden clerk till 1830, when he left to fill the situation of gardener to Sir Charles Lemon, at Carclew, in Cornwall. While at Chiswick he published, in conjunction with Mr. Alfred Chandler, of the Vauxhall Nursery, a work called "Camellia Britannica," for which Mr. Chandler made the drawings and Mr. Booth wrote the letterpress. Only a few parts ever appeared, as it was found to be a commercial failure. During the time Mr. Booth was at Chiswick he kept the meteorological register for four years, from 1826 to 1830, when he left for Carclew. He also contributed several papers to the "Transactions" of the Horticultural Society, and subsequently to the periodicals of the day.

Though he went as gardener to Carclew, he soon received promotion, and when he left in 1853 he filled the office of land steward and general superintendent of the estate. So highly was he esteemed, that when he left Cornwall he received the presentation of a handsome silver salver, with this inscription: "Presented by the tenants and workmen of Sir Charles Lemon, Bart., residing in the parish of Mylor, Cornwall, to William Beattie Booth, Esq., on his leaving Carclew, as a small but sincere token of their regard and esteem. August, 1853."

Through being a share proprietor in the Royal British Bank, when that failed Mr. Booth sustained considerable loss of pro-

perty, and he then for a time held the office of Assistant Secretary to the Horticultural Society, an office which he held with much credit; and all who came in contact with him will remember how courteously he performed its duties. When the Society became "Royal," and went to South Kensington, its objects, or rather projects, were so grand, and its aims so elevated, that a gentleman of Mr. Booth's practical turn could not see any of them, and so he retired, leaving it to others of a more adventurous and self-sufficient constitution to carry them out. How they did it everybody knows. Mr. Booth continued to be a member of the Floral Committee of the Society till the day of his death, and was also an Associate of the Linnean Society.

## NATIVE MOSSES.

I HAVE looked with great interest for a few lines from some of your contributors, but have failed to find any, on those beautiful plants our native Mosses. Being a gardener in Kent, and not a great way from that famous place Keston Common, I and a friend paid a visit to it a few evenings back, and we found it completely matted together on all sides of us with beautiful Mosses, many of which deserve an important place in cultivation. The humble and apparently insignificant Moss is an active agent in some of the most important changes of Nature; by the large amount of moisture which it absorbs, its decay and subsequent renewal in succession, the hardest rock upon which not even a blade of grass could grow becomes covered in the course of years with a stratum of fertile soil, supporting luxuriant trees. At first a little dust is blown into the interstices of the rock, into which are also driven by the winds some of the seeds of the Moss from a less sterile spot; here they vegetate, and the hitherto naked rock becomes covered with pretty green tufts, which, spreading wider and wider year after year, its whole surface is at length covered with the smiling carpet of Nature. The continual growth and decay of the Mosses and other small plants gradually increases the thickness of the soil, until at last the noblest trees of the forest clothe the once hard and barren rock with the richest products and the grandest vegetation. Thus sandy heaths and deserts are converted into verdant and fruitful fields.—J. H., Gardener to B. F. Overberg, Esq., The Trellis, Bickley.

## A SCARECROW.

It is well known that blue and scarlet colours in juxtaposition cause a dazzling effect on the eye. These colours strung on a line and placed over Strawberry beds produce a puzzling effect on birds, and no bird will enter the garden while these colours flutter in the air. Pieces of blue and scarlet calico should be cut about 1½ foot in length, and tied to a line 1 foot apart. An old flannel petticoat will supply a large quantity of inexpensive scarlet strips. This line is to be supported by poles 6 feet in height from the Strawberry beds. To support Strawberries, keeping them clean and enabling them to ripen all round, take a piece of stout wire a yard in length, bend it at right angles 10 inches from each end, bend the space between the right angles into a curve. Stamp these two ends 6 inches in depth into the earth close to the Strawberry plants, then draw the fruit over the wire, each plant requiring two. To prevent rusting place the wires in creosote three or four days, and then dry them.—OBSERVER.

## NORMANTON PARK.

THE SEAT OF LORD AVELAND.

DYER, in his poem "The Fleece," dwells on

"The clover'd lawns  
And sunny mounts of beauteous Normanton,  
Health's cheerful haunt, and the selected walk  
Of Heathcote's leisure."

It was named after the Normans, who became its possessors at the Conquest. From them it passed to the De Basings, Mackworths, and Heathcotes.

The situation of this place is well chosen; the hall is built on high ground, commanding extensive views of the most picturesque scenes in this part of the county of Rutland. In the distance are seen the woods of Exton and Burley-on-the-Hill, and in the valley there is a large stream of water which has been formed into a lake, with an island in the middle. This lake is seen from the windows and the flower garden, and adds much to the beauty of the scenery. There is a good-sized deer park, in which there are some fine avenues of trees,

which are seen from the entrance to the hall. Although the situation is high, and one would imagine rather dry in summer, yet, from the healthy and vigorous appearance of the trees and shrubs, there can be no doubt but the soil in the park is of excellent quality. *Gentiana autumnalis fugax* is found in the park. Sir Gilbert Heathcote, one of the founders of the Bank of England, erected the present mansion on the site of the ancient residence, built by Sir Henry Mackworth in the time of Charles I.

In the pleasure grounds there are a great many choice Conifers and other interesting plants, which all seem to grow well, although they are fully exposed to high winds. Amongst others I noticed *Cupressus macrocarpa* from California, a fine plant growing well; a very fine Weeping Ash, from 30 to 40 feet high; *Cupressus torulosa* from the North of India, which in some situations is tender, but here it is in good con-

dition; Variegated Holly, 30 feet high; *Berberis fascicularis*, a grand bush, in flower; *Cupressus Lawsoniana*, 20 feet high—there is no doubt but this is one of the finest plants ever introduced into this country from California; *Taxodium distichum*, the deciduous Cypress from North America, 40 feet high; *Retinospora pisifera* from Japan—this is growing well, and makes a pretty small tree; *Cupressus Lawsoniana erecta viridis*, a garden variety, and extremely pretty for planting singly on a lawn; *Thujaopsis borealis*, introduced from Nootka Sound, a fine plant 12 feet high, and very compact; *Libocedrus decurrens*, a good plant 12 feet high, growing well; *Wellingtonia gigantea*, 30 feet high, a good specimen; and a large plant of the Snowy Mespilus, *Amelanchier Botryapium*, covered with flowers.

Planted with evergreen shrubs, so as to hide it from the grounds, there is a pretty rock garden, recently formed by Mr.



NORMANTON HALL.\*

Grey, the energetic gardener, but not finished at the time of my visit. A great number of rare gems were already planted, and when it is finished it will be a most interesting spot. It would occupy far too much space to name half the rare Alpines already planted. I will only name a few of the most conspicuous. Among hardy Ferns were fine healthy plants of *Ceterach officinarum*, *Allosorus crispus* or Parsley Fern, the Holly Fern, and many others. Among Alpines were *Draba ciliaris*, with pretty white flowers; *Linnaea borealis*, a small evergreen perennial with flesh-coloured flowers; *Lithospermum prostratum*, a small-growing evergreen shrub with deep blue flowers; *Epimedium macranthum*, a large-flowering kind with pretty flowers; *Erinus alpinus*, growing on stones, forming dense little tufts, with pretty red flowers—a perfect gem among Alpines; *Antennaria dioica*, with small pretty leaves; *Semprevivum rupestre*, dark bronzy leaves, purple in winter, very striking; *Saxifraga pectinata*, small and compact-growing; *S. oppositifolia*, beautiful for massing; *S. pyrenaica*, large and bright; *S. ligulata*, *S. affinis*, *S. rivularis*, *S. ceratophylla*, shining-calyced, from Spain; and many others; *Gentiana verna*, very dwarf, with deep blue flowers; *Ramondia pyrenaica*, one of the best Alpines in cultivation; *Sedum glaucum*, pretty for growing on stones, or forming a carpet for small beds; and *Sedum acre aureum*, which will also grow on stones, and when used in spring is very telling among other Alpines.

The flower beds were gay with Hyacinths—red, white, and blue, mixed in the beds amongst Primroses, Polyanthus, and *Eranthis hyemalis*, or Winter Aconite. Some beds were filled with such plants as *Palmonaria officinalis*, *Doronicum caucasicum*, with bright yellow flowers; *Arabis albida* and *variegata*, *Ericas*, and such-like flowers. The flower garden has many pretty shrubs planted about among the beds, and as these were all full of spring flowers the effect produced was very pleasing. There is a pretty wild border in the pleasure grounds, in which were growing many interesting spring flowers, such as *Adonis vernalis*; *Anemone apennina*, the blue Wood Anemone; *A. spennina blanda*; *Sanguinaria canadensis*, a hardy North American plant with white Anemone-like flowers; and *Narcissus moschatatus*. The idea of a wild border in pleasure grounds is a good one, as plants in such a position can be allowed to grow at random as it were, and thus show their native style of growth.

The kitchen gardens are not very extensive; but spring gardening is also introduced with excellent taste. On entering from the pleasure grounds there is a border on each side of a walk 100 yards long and 9 feet wide, on each side planted in lines, both sides being alike. The first line next to the walk was *Aubrietia purpurea*, the second *Arabis variegata*, the third and fourth *Anemones* of mixed colours, and the sixth line *Doronicum caucasicum*. On each side of the principal

walk there are a great number of standard Roses, which in summer are very beautiful. This border is 100 yards long with a walk 12 feet wide; on each side of the walk spring flowers are planted, such as red and white Daisies, Golden Feather Pyrrhulium, Forget-me-not, Primroses, &c.

The glass houses are very old, and grown in a vinery there is a good *Vino of Barbarossa*, showing splendid bunches from every eye; it is trained and pruned almost like a Peach tree, and by this simple process Mr. Grey succeeds in getting abundance of fruit every year. In this house there was a great number of bedding-out plants, *Humea elegans*, and other plants for furnishing purposes. In a small greenhouse I noticed nice young plants of *Adiantum assimile*, *A. farleyense*, *A. pentadactylon*, *Asplenium Belangerii*, *A. bulbiferum*, *Lomaria gibba*, *Pteris scaberula*—one of the finest *Pterises* grown; some noble plants of *Imantophyllum miniatum*, and large

plants in flower of *Amaryllis*. On a shelf were a quantity of large plants of that most useful Orchid *Cypripedium insigne*.

Strawberries are forced in pits; the sort most grown is Keena's Seedling. Cucumbers are also grown in pits; Telegraph is the variety relied on.

In the gardens Peaches have set a moderate crop; vegetables look healthy, and are in abundance. Deep digging and plenty of manure seem to be the means employed to secure quick-grown and large supplies. On a small piece of ground in the kitchen garden I saw a number of young plants, which are to be grown here one year before being planted in their permanent quarters; among them I noticed *Acer polymorphum atropurpureum*, a highly ornamental Maple from Japan, with splendid dark purple foliage, forming a hardy bushy shrub, and *Aralia spinosa*; these constitute fine ornaments for planting singly on a lawn or forming into groups; they have straight



VIEW IN THE GROUNDS AT NORMANTON.\*

atoms, and their foliage is spiny. Others were *Thuja aurea*, *Retinospora plumosa*, *Sambucus racemosa* in flower, this has pretty red berries in autumn; *Acer argenteum*, with silvery leaves; *Shepherdia argentea*, *Cornus mascula*, and *Colutea ornata*.

The pleasure grounds, flower gardens, and kitchen garden are all near to the hall, and they contain many interesting objects. I have only named a few of them. Good order was the rule everywhere, and abundant evidences on every hand that employer and gardener take great interest in the pursuit of horticulture.—I. SMITH, *Exton Park Gardens, Rutland*.

### HEATING.

PERMIT me, in reply to what "W." stated in your paper of the 18th, to assure him that Messrs. Rivers have at work our boilers, and one adapted to the principle of an Arnott stove made by us; but in place of the usual fire lumps we insert a close-coil pipe, which is the boiler proper. Special attention is called to this close coil, as we find others have been in the market with an adaptation of the same, but the case of their stove is in consequence burnt away and rendered useless, and it has proved a failure; but our patent consists in this coil

being close, so that no fire can exist in the stove but what is encircled by this coil, the fire being fed from above by a coned cylinder, and it will last any number of hours. Messrs. Rivers have in one of their vinerias one of our No. 5 stoves heating some 230 feet of pipe, and it is the surprise of all who see it for the great heating power and small quantity of fire required.

—SAMUEL DEARDS, *Harlow*.

### NOTES ON VILLA AND SUBURBAN GARDENING.

*The Treatment of Window Plants during the Summer Months.*—Although indoor gardening loses much of its interest in summer when Nature is so prodigal of her beauties in the open air, still the amateur will find great interest in adorning his windows with his choicest productions. Nothing can have a finer effect in a drawing-room or sitting-room than a flower bloomed well in a pot and tastefully trained; and windows filled with healthy *Pelargoniums*, *Fuchsias*, &c., convey a sense of refreshing coolness to the apartment. To keep up a succession of flowering plants requires some forethought, and many are discouraged by apparent difficulties. I hope by a few plain rules to assist those who garden on a small scale and have no greenhouse, in the art of securing a succession of handsome flowers, so that the charms which a household flora confers may be their own.

Preamning that you have a frame, and that your stock of plants was repotted according to former directions, you will now

\* From a photograph by Messrs. Cousins & Priest, of Grantham.

he in the midst of your prosperity and making a display of your riches. The bulbs are all laid to rest for the season. The early Roses, &c., which succeeded the bulbs will have done flowering, and should be replaced by Pelargoniums, Fuchsias, and other plants which have been before recommended. Let every pot be kept in the frame until the bloom is ready to expand, that the full benefit of light and heat may be secured, and then remove it to the window. When there it should be moderately watered. It is astonishing, to the inexperienced, how small a quantity of water will keep a plant in health. I have some Pelargoniums in 60-sized pots in a window fully exposed to the sun, and I find watering once a-day quite sufficient, and even then take care that none stands in saucers. But to do this it is requisite that the pots should be kept as much as possible from the solar rays, which may be accomplished by opening the window so that the thick lower frame of the sash shall intercept the light, and so keep the plants cool. If pots are placed outside the window, which is often done with good effect, they may advantageously be put into empty ones of a larger size, by which a current of air will be secured around them, and a lower temperature maintained. Any little contrivance of this description will be useful, for frequent watering has many evils; among others the soil is rendered too compact, and the most valuable portions are quickly washed from it.

The most scrupulous cleanliness must be observed with window plants, or their health will soon suffer. All decaying leaves should be removed as they appear, and no flowers should be allowed to die upon the stalks. By removing flowers as soon as their beauty is impaired neatness is consulted; and this is not all: by stopping the natural tendency to produce seed, more flowers will be produced. Mignonette in pots soon becomes shabby if this rule is neglected, but by picking off every spike of flower when it is elongated and bare, laterals will quickly reward your pains and keep up an air of healthfulness. It is scarcely necessary to prescribe an abundance of fresh air, and it is presumed few persons would in summer sit with closed windows, unless the dust of a high road were whirling near them.

Having pots in your frame for a succession, remove your plants from the house as soon as the bloom is over. Some sorts may be cut down, and with care will flower again. Perhaps the warmth of the season may bring too many forward at once; in that case pinch-out the bloom of some of them, and you will have the benefit later in the season. Scarlet Pelargoniums are valuable in this kind of window gardening. I find small pots do best, producing least foliage and most flower. Fuchsias also repay the grower for window culture. By a little forethought and daily attention the window, even without a balcony, may be made very attractive until frosts appear again, and our now dormant bulbs demand and repay our care.

In addition to the plants recommended, the amateur who is thinking of having a few pots of flowers for his window or drawing-table through the winter must put in a first sowing of annuals for autumn blooming in pots. It is almost needless to name the kinds best adapted for this purpose, as in every garden they may be seen in bloom; but as some may not know those which are most suitable for winter-flowering, I will enumerate a few. First, then, among the tribe of beauties are *Nemophila insignis*, *atomaria*, and their varieties. Next may be named *Collinsia bicolor* and *grandiflora*, *Clarkia pulchella* and *pulchella alba*, and lastly *Erysimum Peroffkianum*, *Ageratum mexicanum*, and the various kinds of *Salpiglossia* and *Petunia*. The last, however, are best raised from cuttings taken from the old plants in August, and if potted singly will flower in a warm room up to Christmas.

As most annuals transplant indifferently, it will be advisable to sow them at once in the pots in which they are intended to bloom; and in draining these it will be well to place an oyster shell at the bottom, and fill the pots half full of moss before any soil is put into them. The moss will be found advantageous through the summer, as it will retain moisture, and, if the pots could be plunged in it, it would be greatly in favour of the plants. The seed must be sown very thinly, and as soon as the plants are up they must be thinned, retaining only the proper quantity in each pot. This, it must be recollected, is the first supply, but a second for late-flowering must be sown about six weeks hence. Those who admire Stocks in pots may sow some of the Ten-week kinds, and Mignonette will of course not be forgotten.

Of plants before spoken of, the Scarlet and other Pelargoniums, the propagation of which was recommended, and which require to be potted-off—if they are well rooted they may be placed at once in their blooming pots in rough soil; and if they are not, give them pots in proportion. They must be stopped to make them bushy, and no flowers must be left on the plant till after the middle of August. The first sowing of *Primula sinensis* will now be fit to pot-off. They must be put two plants in a large 60-sized pot in loam, peat, and leaf mould, and it will be advantageous if they can be kept under glass in showery or dull cold weather. A second sowing must now be got in for the main winter and spring supply.

If strong plants of *Salvia* are desired for blooming in pots, no

time must be lost in preparing them; but as small ones are preferable, the blooming points taken off the old plants at the end of August and rooted in heat will be quite early enough. Propagate Chinese and other *Rosa* as fast as you can procure cuttings, as if you get the plants strong by autumn they will, with very little forcing, bloom all through the winter. It is by no means an unrequited occurrence for hundreds of plants of Chinese Primroses to bloom all the year without producing a grain of perfect seed. It becomes then necessary to treat a few individuals in a manner expressly adapted to cause them to bear seed, for their management as merely ornamental objects is not suited to this purpose. The primary consideration connected therewith is to prevent the plants exhausting their strength in the development of flowers during the winter. As an assistance to this, it is better to sow in July than at an earlier period; and by removing the flower stems as they appear, strong plants will result for the summer's blooming. A situation fully exposed to the influence of the sun is essential when in flower, that the pollen may be properly matured, which is, indeed, the great and almost only requisite to the plentiful production of the seed.—W. KEANE.

### THE CANDLE PLANT.

THERE is an inquiry respecting this plant on page 370. The plant inquired after is, I am of opinion, *Cacalia articulata*, which is a succulent. The whole plant, stem and leaves, has the same glaucous hue as *Echeveria secunda glauca* when grown in heat. It is rare: I never but once (some years ago) saw a plant of it, and then in a cottage window. It and *Crassula imbricata* and *Monanthes polyphylla* are, I fear, lost in cultivation; they would be valuable acquisitions to the collector and lover of curious or rare plants—at least, they would be so to me. Loudon tells us the plant was introduced from the Cape about 1775, and in the "Encyclopædia of Plants" there is a figure of it. Mr. Peacock, of Hammersmith, may have it in his collection.—JOHN GRUMMITT, *Priority Bank House, Sheffield*.

### DRYING PLANTS FOR THE HERBARIUM.

THE approved plan is to place them between sheets of soft paper—which, like blotting-paper, will absorb moisture rapidly—and press them under boards or a screw press. The paper must be changed every day for a few days, or the damp paper will mould the specimens, or turn them black. The object is to carry off the moisture from the drying specimens as rapidly as possible.

A couple of years ago Professor Alphonso Wood invented a press, which is a capital idea. It is made of wire—such as is used for common sieves—the meshes about a quarter of an inch wide. Two of them are used just as two covers of a book or portfolio would be. These are strapped together, so that any thickness of paper can be used. The plants are put in these papers as gathered. Soon after gathering, the wire portfolio can be put under a trunk, or other heavy article, to press them a little, and then hung in any warm place to dry.

In the writer's travels last year he had one of these presses, and the opportunity taken to hang it out of the car windows, or on the side of the waggon, exposed to the sun going over the mountains, or by the camp fires at night; and in this way the moisture went out through the meshes without any change whatever being required until they were dry. Two or three times a-day the package would be cut, so as to have the inside of the mass made the outside, and so on; but the labour was wonderfully small in comparison with what we have had to do in our past life on similar expeditions; and many a time last year we thanked Professor Wood, and lamented at the same time that he did not think of the thing thirty years before.—(*American Gardener's Monthly*.)

### DOINGS OF THE LAST AND PRESENT WEEKS.

#### MARY FRUIT GARDEN.

THIS is usually a very busy time in the kitchen and fruit gardens, and especially so in such seasons of drought as this has been. We managed to cut-out superfluous wood from the wall trees, and to nail-in the growths that would be the future bearing wood. A very common mistake is made by those who have not had much experience in this sort of work, and that is to nail-in too much wood; two or three shoots are placed where one would be sufficient, consequently sun and light, the ripening agents, are excluded, and healthy fruit buds cannot be produced. Another of the minor details must be noticed, and that is the necessity of carefully preserving the leaves at the base of the foreright shoots when these are cut-back. We have seen

men, not wanting in intelligence in other matters, who would hurry over this work, cutting away the growths to within an inch or more of their base, careless whether any leaves were left or not, and sometimes cutting the principal leaf off. It does not take much longer to do the work well: the shoot should be taken between the thumb and the edge of a sharp knife, and broken over, not cut, close to a leaf-bud, being careful not to cut the leaf off at the same time.

Cherries on a wall with a west aspect are ripe and very good. Knight's Early Black was the first to ripen, it is an excellent early Cherry; Black Tartarian succeeds it. Elton and Bigarreau Napoléon are the favourite red sorts. Morello Cherries on the north wall, as well as those in the form of pyramids in the kitchen garden, are doing badly; indeed, all the pyramid trees are in a like plight; instead of stoning, nearly three parts of the fruit turned yellow and dropped off. Probably that left upon the trees will be better in quality. Starlings are very troublesome to us at the time of the fruit ripening; long before it is ripe they attack it. On the walls nets are fixed, but it is not so easy to cover large trees in the open garden, the expense being in some instances more than the fruit is worth. The caterpillars of the Bombyx Neustria, or Lackey Moth, have mostly been destroyed, the few that escaped are getting ready to undergo their transformation; where found crawling about they are destroyed. A far more difficult subject to get rid of is the small maggot that lives in the fruit and causes it to drop before it is ripe. Where the trees are small the only remedy is to look over the fruit and pick off and destroy all attacked; it seems to be unusually active this year.

No time should be lost now in looking over all bush and pyramid trees in the open borders, and cutting out the young wood, except where it is required to fill up vacant places, or to increase the size of the trees. Apple, Pear, Plum, and Cherry trees require precisely similar treatment. Strawberries that promised to bear most abundant crops are showing the effects of the frosts, much of the fruit is mis-shapen and stunted in appearance. The beds have been freely watered, and the fruit has been supported above the leaves by means of sprays cut from the tops of pea sticks.

Raspberries give promise of a most abundant crop; being moisture-loving in their nature, they are planted in a shady part of the garden, the ground deeply trenched and well manured both at the top and bottom of the trenches. Hoeing up weeds and superfluous suckers is all the attention that has been required.

#### FORCING HOUSES.

*Vinceries*.—In late as well as in early houses, the busy time is over. The Grapes have been thinned out, and the fruit is approaching its stoning period. All laterals are stopped back to the first leaf from where they started; if the available space has been filled up no more growths ought to be allowed than will be sufficient to cover the wired surface, and allow of the perfect maturation of the wood. Attention must also be given to the roots where borders are all inside; it is very necessary to see that plenty of water is applied to them. More shanking is caused by under than over-watering; if the borders are, as they ought to be, well drained, it will hardly be possible to over-water them. In large establishments, where many under gardeners and labourers are kept, the watering is sometimes left to the young man in charge, and his idea of a good watering may be a dozen water-potsful over 300 square feet of surface. In all such cases definite orders should be given, and the gardener should see that they are carried out. Success or failure depends on attention to the minor details. Mildew and red spider should be checked on its first appearance. On the first appearance of mildew paint the hot-water pipes with flowers of sulphur, and get up a good heat; the atmosphere becomes in this way charged with minute particles of sulphur, and if the fruit or leaves are only slightly attacked, the parasite is destroyed. It is very bad management to allow disease to spread until the fruit is injured; and to say the least, it is barbarous treatment to mix, as is sometimes done, a pailful of flowers of sulphur and water, and then syringe the Vines with it. It requires the fumes to be much stronger to kill red spider, and much care is necessary to heat the pipes sufficiently to destroy the spider without injuring the Grapes.

*Peach House*.—Where the fruit has been gathered red spider should be at once dislodged from the trees; they should be deluged with water from the garden engine, an ordinary syringe is scarcely effectual if the house is large. A usual practice is to throw open the ventilators to their full extent front and back, which is proper treatment if the trees are nearly defoliated by red spider, but not if they are well furnished with leaves; it is better then to keep the house close, give a thorough good watering to the inside border, keeping a moderately dry atmosphere, which will have the desired effect of plumping-up the buds for next year's crop of fruit. No more water should be allowed in the house than what is caused by watering the border and syringing the spider or any dust that may have accumulated on the leaves. In later houses, where the fruit is just taking the second swelling after stoning, apply the syringe vigorously, and

shut up early in the afternoon; the house may be kept as hot as a Pine house.

*Plant Stove*.—Dendrobiums, such as *D. Farmeri*, *densiflorum*, *Bensonia*, *Devonianum*, some of the *Laelias*, *Cattleyas*, *Epidendrums*, &c., are just commencing to make fresh growth. Some of them have been rebasketed and repotted, but only those that require it have been attended to. One of the greatest mistakes in Orchid-growing is that of potting or placing the plants in over-large pots or baskets; few Orchids will thrive if they cannot strike their roots into porous material, or where the freshly-emitted rootlets cannot at once clasp the sides of the pot. Many Orchids, owing to their natural position being the branches of trees, succeed best in baskets; these are most frequently made of wood, but this very soon decays, and frequently breeds fungus. A very neat and serviceable article made of pottery is well adapted for hanging baskets; it answers quite as well as those of wood, and has none of its disadvantages. It is made by Mr. John Matthews, of Weston-super-Mare, and will, when more generally known, be much used by Orchid-growers. Tying and training the climbers. These require much attention now, when they are making their wood; it is highly desirable to thin the growing shoots out well. Stove climbers will not flower well next season if these are allowed to twine and grow thickly together. Potting small plants that have filled their pots with roots. Foliage plants, such as *Alocacias*, *Marantas*, &c., require very fibrous material to grow them well. *Anthurium Scherzerianum* should be in every plant stove; this grows best in fibrous Orchid peat, with a little sphagnum added, and the pots well drained.

#### FLOWER GARDEN.

The plants that were put out early are well established and growing freely; we were able to give all a thorough watering, and surface-dress the ground around the plants with rotted manure. We had a good shower of rain soon afterwards, and dull weather since has been favourable to them. *Coleus* and *Iresine* planted a day or two before the frost have suffered. *Alternantheras* planted just afterwards are looking well. *A. amœna* is very beautiful. Picking seed pods from clumps of choice *Rhododendrons*; these are an injury to the plants if allowed to remain, and are also unsightly. We thought a month ago that *Roses* would be poor; we never had a better show of them in beds and borders, and if the exhibitors who annually stage their boxes at the metropolitan shows and elsewhere are as good in proportion, there will be a treat in store for us of no common kind. We have been picking off withered and overblown flowers, as these, if allowed to litter about, very much mar the beauty of the Rose quarters. Tying *Carnation* and *Picotee* stems to sticks, and brushing off green fly with a small brush.—J. DOUGLAS.

#### TRADE CATALOGUE RECEIVED.

J. Caven Fox, Royal Horticultural Gardens, South Kensington, London, W.—*Illustrated Catalogue of Rustic Summer Houses, &c.*

#### TO CORRESPONDENTS.

\*. It is particularly requested that no communication be addressed *privately* to either of the Editors of this Journal. All correspondence should be directed either to "The Editors," or to "The Publisher." Great delay often arises when this rule is departed from.

We also request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

PLANTS FOR A GLASS GLOBE (*J. C.*).—You will find *Anacharis alismastrum* and *Callitriche verna*, two plants found in ponds and ditches, suitable for your globe in which gold fish are kept.

CALYCANTHUS FRAGRANS SEED (*B. A.*).—It is not uncommon for the *Calycanthus fragrans* to ripen seed in favourable seasons.

VARNISHING CALICO (*Idem*).—Take three pints pale linseed oil, 1 oz. sugar of lead, and 4 ozs. white rosin. Grind the sugar of lead with a little of the oil, and then add the remainder and the rosin. Stir the whole well together in a large iron pot over a gentle fire. Tack the calico loosely on the frame, and apply the mixture while hot with a large brush.

SALAD PLANTS (*J. Wilson*).—You may add Chicory, Endive, Lamb's Lettuce, Winter Cress, and Watercress. Your Victory of Bath Melon is quite correct.

RUSTIC EDGINGS (*Old Subscriber*).—The rustic edgings in the work to which you allude are not in use in this country, nor are they likely to be, as they must, to be available, be cast light, and are then so small and so liable to breakage as to be only available for flower borders, where they have a neat appearance. They are best galvanised, but should be painted green or bronze. The nearest edging we have seen is one formed of stone 3 inches wide and 8 inches deep, 5 inches let into the ground and the upper 3 inches dressed, with the upper edges chamfered off. Such edgings are very neat, and are suitable for a vegetable garden. Any mason can form them out of local stone.

SPIRGUEA PILIFERA (*H.*).—As a lawn plant this has proved a failure; it only thrives in some soils and situations, and, as a rule, offers no advantage in the most favoured over a lawn of natural grasses; its flowers give quite as much trouble to remove as there is in mowing a grass lawn. Its only value is for carpet bedding. A good collection of *Picoteas* and *Pinks* may be seen at Mr. Turner's, Slough.

**EVERGREENS UNDER TREES (B. W. M.).**—There must be something the matter if "Ivy, Ferus, Periwinkle, rock plants, and almost everything" fail to grow on stumps under your Beech trees. The only reason we can give for the failure is that you do not give water regularly or sufficiently. These things certainly ought to grow in such a situation, but stumps and rootwork are not to be depended on unless the situation is a moist one, or watering is constantly given.

**LEAVES CURLED (Roby).**—The curling of the leaves on your Plum tree is caused by sudden transitions of temperature from heat to cold, producing a check to growth; and the insects, finding a ready shelter, take possession.

**MANURE FOR A GARDEN.**—"R. F. B." says he keeps no animals of any kind, and as the farmers in his neighbourhood are precluded from selling manure, he does not know what to do. He has a good crop of grass in his orchard, which he wants to know if he could use. There is no doubt that if you have no other use for the grass you may use it as manure, and this is best done in the fresh state. Cut it and dig it in now. What do you do with your house sewage? If it is wasted by being allowed to drain away, make a tank and collect it as carefully as if it were food, for it will ultimately become so if judiciously applied to your garden crops.

**ONIONS DISEASED (A. B. Rugby).**—They are not attacked by the Onion fly, but by a parasitic fungus, *Vermicularia circinans*. Water between the rows with lime water and weak guano liquid manure. Another year, previously to sowing, have the top spit of the soil pared and burnt.

**GRUBS DESTROYING PINUS SHOOT (R. S.).**—The young shoots of *Pinus insignis* are infested with the larvæ and pupæ of a small pretty red and silver moth, *Tortrix resinosa* or *T. urisana*. We know no other remedy in the present state of the insects than to pick off and burn the infested shoots. In a few weeks' time the moths, which are conspicuous enough, will appear, and should be caught and killed.—I. O. W.

**DATE PALM IN DWELLING-ROOM—GREEN APHIS ON CALCEOLARIAS—CUCUMBERS NOT SWELLING (A. B. C.).**—You could not "cultivate a Date Palm in a dwelling-room;" but it would remain in one a long time for ornamentation when the growth is perfected. The Calceolarias infested with green aphids would be best freed by fumigation with tobacco, the plants being placed under a covering to confine the smoke about them, filling thoroughly with tobacco smoke. The cause of the Cucumbers not swelling is probably want of heat—the atmosphere being cold and moist. If in a bed, lie it with hot dung or other fermenting material. In the absence of particulars we cannot further advise.

**DATURA NOT FLOWERING (A Constant Reader).**—The following general treatment of this plant is taken from our "Greenhouse Manual." Keep rather dry in winter, or so dry as not to allow the wood to shrivel, and prune in March to within a few eyes of the old wood. Water carefully or moderately until the young shoots are an inch long, then repot, discarding, at least remove most of the old soil, and return to the same size of pot. Water carefully, just keeping the soil moist, and syringe lightly overhead with water morning and evening. Slight shade is advantageous until plants have recovered from the potting. When the pot is full of roots shift into another one-fourth larger in diameter, watering moderately for a time until the roots are in the fresh soil, then copiously, and syringe twice daily, directing the water against the under sides of the leaves, and when the pot is full of roots employ weak liquid manure. A light airy position, and abundant waterings without making the soil sodden. Three parts light fibrous loam, half part each leaf soil and old dry cow dung, with efficient drainage.

**LICHEN AND MOSS ON LAWN (Sussex).**—The lawn must have a close and moist surface. Rake it well with an iron rake, removing all the moss and lichen practicable, and dress it with compost that may be formed of good soil or rubbish reduced to soil, mixing with it one-sixth of ashes and one-tenth of fresh lime, thrown into a heap, and allowed to lie a week or ten days. It would then be well to sift it with a three-quarter-inch sieve, apply to your lawn in August about half an inch deep, and rake thoroughly afterwards, sowing over it 12 lbs. *Cynosurus cristatus*, 8 lbs. *Festuca duriuscula*, 4 lbs. *Poa nemoralis sempervirens*, and 8 lbs. *Trifolium minus*, along with 4 lbs. *Trifolium repens* in mixture for one acre. Rake lightly after sowing, and roll thoroughly. If you would not like the appearance late in summer, sowing may be deferred until March, the seeds being sown with the first prospect of rain in April. If sown late in summer, do so with the earliest prospect of rain in September. *Bougainvillea glabra* would succeed in a warm greenhouse, but not in one kept at the usual greenhouse temperature.

**WALL TREES UNFRUITFUL (Alderman J. Wood).**—It is difficult to state the cause of your trees being unfruitful, but probably they are too vigorous and the growths do not ripen perfectly. Root-pruning judiciously in the autumn would most likely give you more fruitful trees, and with surface applications of manure, and liberal waterings in dry weather, you might secure finer fruit. The Peaches and Nectarines may have fallen in consequence of frost, or of insects. Our "Fruit Gardening for the Many" will suit you. It may be had by post from our office for 5d.

**CATERPILLARS ON GOOSEBERRY AND CURRANT BUSHES (A Constant Advertiser).**—The leaves seem to be completely skeletonised by the caterpillars. To destroy them dust the bushes with white hellebore powder through a flour-dredging box, or you may sprinkle the bushes by means of a fine-rosed watering-pot, or an old whitewash brush, with 1 oz. of white hellebore to a gallon of water. White hellebore is a poison, and should be used with care and judgment. Dr. Hogg in his "Year Book," page 93, states—"1. The most simple, least expensive, and certain method of exterminating these pests is to cover the surface of the ground early in the spring all round the Gooseberry bushes 2 or 3 inches thick with fresh tan from the tanyard, the same material as is used for bark-beds. Let it remain until the autumn or winter following, and then dig it in. 2. In November or December remove the earth from round the stem of each tree for about the space of 18 inches, and as deep as the roots will permit. Expose the roots to the weather for three or four weeks, then fill-in with manure or fresh earth."

**STRAWBERRIES PLANTED LAST AUTUMN (Idem).**—Probably your plants were put out so late and made such small progress as not to form crowns for fruiting. Though they have not fruited this season they will, if the runners were from fruitful plants, afford you an abundant crop next year, but if the runners were taken from unfruitful plants the chances are you will not next year have a crop of fruit worth mentioning. Too much care cannot be taken in selecting runners for planting, none being taken from plants that have not fruited.

**PEACH TREE IN GREENHOUSE (A. E. Russell).**—It is difficult to keep the temperature sufficiently low for Peach trees in winter if plants that require to be safe from frost are kept in the house; but we have two Peach houses

which have not been below freezing-point the past three years, and have this year a splendid crop, the fruit in the first house being now nearly all ripe, and those in the other house will be ripe in July. We should keep the house as cool as you can in winter, not exceeding 40° from fire heat, the soil to which the tree is growing rather dry, and yet not dust dry, or the buds will fall when the soil is made wet. Do not have the shoots crowded, but keep them at about a foot apart on the main branches, and the main branches about the same distance apart; stop the shoots if they exceed 12 inches in length, but if less, or only that length, do not stop them. Any shoots resulting may be stopped at the first leaf. We do not advise your interfering with the roots. Your difficulty seems to be in keeping the house cool in winter. The roof, we presume, is not covered with climbers or Vines, so as to shade the Peach tree, which would be sufficient to prevent the ripening of the wood and the non-setting of the fruit.

**SCREEN FOR GARDEN (M. O. D.).**—Neither the Evergreen Thorn (*Crætagus Pyracantha*) nor *Cotoneaster micropphylla* would succeed trained to a wire fence in an exposed situation; but the latter would do so if the situation is not very bleak. In an open situation it would be some considerable time before it attained a height of 5 feet. What more ornamental evergreen screen could you wish than one of *Arbor-Vitæ*? There would be no necessity for the wire fence, and you might obtain plants of the height you require which would move with perfect safety, and be cheaper than the fence, besides giving what you seek at once. Both the Siberian and American *Arbor-Vitæ* can be had at a cheap rate. Plants which will make an effective screen at once are advertised in our columns at the planting season.

**ROYAL VINEYARD GRAPES NOT SETTING—PEACHES DROPPING (An Old Reader).**—The Royal Vineyard Grape sets its fruit well at Loxford Hall, Hford. The globules of water you allude to can be removed by drawing the hand down the bunch. The hand must be dry and clean. It is best done at 10 A.M.; this will also cause the fruit to set. The "fly" you allude to is not easily destroyed, but persistent fumigating will do it, and that is the best way to get rid of it. If you ventilate your houses freely, and see that the trees do not suffer from want of water at the roots (when you water the border you must give sufficient to drain down to the bottom of the border), the fruit should not drop off.

**VINES (A Guernsey Amateur).**—They have done well. Stop the leading shoots when they have grown to within 18 inches of the top of the rafters, and stop all lateral growths at the first leaves that are formed.

**CANVAS HOSE.**—We have been informed by several correspondents that canvas hose can be obtained from those houses whose advertisements will be found in our pages, and which deal in seeds and garden implements.

**CUCUMBER PLANTS STOPPING (A Subscriber, R. T.).**—The plants having been stopped should not be again stopped until they reach to within a foot of the length required; but should they show fruit, stop them at the first joint beyond, and so on throughout, thinning-out shoots that are getting old and bare, and training young and fruitful ones in their place.

**IVY UNDER CHESTNUT TREES (H. G. O.).**—The Ivy does not grow because you plant them under the trees, and they are deprived of nourishment owing to the roots of the latter, whilst moisture is shut out by the foliage. It is a different case where Ivy is planted at the same time as the trees, or springs up naturally with them, the Ivy making progress and root-growth proportionate with the trees. The only way now to succeed is to plant some strong plants outside the spread of the heads of the trees, giving them good, rich, light soil to grow in, and their shoots may be trained beneath the trees, a little soil being placed on the surface, and the shoots secured with pegs. Go over them during growth occasionally, and train the young shoots towards the centre of the circle which the Ivy plants form round the trees. The Ivies having soil to grow in, deriving their support from watered ground, will flourish, and soon cover the space under the trees. Plant a yard apart. There are no better kinds than the English (*Hedera Helix*), Irish (*H. canariensis* or *hibernica*), and Rægnere's (*H. Rægneriaua*). The dwarf-growing and small-leaved kinds are best for edgings to borders, as *H. donoliensis* and *H. taurica*. *H. digitata* is fine for a border edging to shrubberies or on rustic work. The new silver-edged *H. elegantissima* is very neat for small edgings; *H. poetica* and the variegated form are also good.

**AZALEAS AFTER FLOWERING (Co. Antrim).**—Place them in a house or pit with a temperature of 55° to 65° at night, and 70° to 75° by day, with a rise from sun heat to 80° or 85° or more. Sprinkle them overhead morning and evening, and keep the atmosphere moist by sprinkling the floors, walls, and other surfaces with water of the same temperature as that of the house, giving shade from bright sun, and continuing this treatment until the growth is complete and the buds are formed, then remove to a cool and airy house. If the plants require potting it should be done before they are placed in heat.

**BEDDING GERANIUMS (Idem).**—The following are good:—Bayard, crimson; Crimson King, dark crimson; Dr. Tait, crimson; Jean Sisley, scarlet; Master Christine, pink; Red Dwarf, deep red; Shakespeare, deep red; R. Evans, rose; Lustrous, scarlet; Vesuvius, scarlet; The Bride, white; and Flame, vermilion scarlet.

**NAMES OF FRUITS (M. C.).**—It is a difficult matter to name Strawberries from one fruit. That you sent is like *Eleanora*.

**NAMES OF PLANTS (Alpha Barnett).**—*Habenaria bifolia*. (*Rosa*).—*Lagerstromia indica*. (*G. W. J.*).—We cannot undertake to name *Roses* or any florists' flowers. There are varieties which so closely resemble each other, and which differ only in mere shades of colour, that to attempt to name them correctly from a single flower would be impossible. (*G. Luscombe*).—*Arum Dracuncul.* (*R. Welsh*).—*Pimelea decussata*. (*Alex. Millar*).—*Eriophorum angustifolium*.

## POULTRY, BEE, AND PIGEON CHRONICLE.

### MR. TUDMAN'S PARTRIDGE COCHINS.

I HAVE read with some surprise and annoyance the remarks on my Partridge hens exhibited at Bristol Show, in your contemporary, the *Fanciers' Gazette*. None can be more pleased than myself to have my birds submitted to a fair and just criticism; but when a critic speculatively asserts, without facts or any information to justify such an assertion, that such and such birds are "cross-bred," and that they are the product of

"an interesting experiment," he assumes what is unjustifiable, and what as far as regards my two beautiful hens, the champions of Bristol, is totally untrue. "The interesting experiment" alluded to must have taken place in the vivid imagination of the reporter, certainly not in the Ash Grove yard, as during the last fourteen years that I have been a breeder of Partridge Cochins, a Brahma has never been in the yard. The only introduction of fresh blood has been by Partridge cocks. Hence how arises the traces of the cross your reporter so plainly sees? This critic ought to have known that Partridge hens showed the coveted pencilling for many years before Brahmas were "invented." The Bristol hens are descendants of the celebrated hen "Titania," bred by me and exhibited at Bristol in 1867, which Mr. Wright illustrates in his "Poultry Book," and of which he says, "She was one of the very best hens ever beheld," &c. The pedigree of this hen, "Titania," can be given for many years previous to her birth.

At Croydon Show, in 1871, the hen now alleged to have a "pea comb" was exhibited as a pullet, her companion being unfortunately killed there. The same critic, I believe, remarked then of this same hen, that "her markings, size, and shape were such as have rarely been seen before."

The amount of scrupulous care that has been taken to keep my breed of Partridge Cochins entire, compels me to deny the inferences of this reporter, also to resent the animadversions (directly opposed to fact) cast on the awards of our Judge of judges. The enclosed copy of a letter from Mr. Hewitt, please to publish herewith.—EDMUND TUDMAN, *Ash Grove, Whitechurch, Salop.*

[COPY.]

Eden Cottage, Sparkbrook, Birmingham, 15th June, 1874.

To E. Tudman, Esq., Ash Grove.

MY DEAR SIR,—Allow me to make an inquiry respecting your champion cup pen of Partridge Cochins exhibited at Bristol, it being reported in the *Fanciers' Gazette* of Saturday last, that they are the product of an "interesting experiment; one bird had the exact pencilling of a fine Brahma which no Partridge Cochins ever had, the other had a pea comb." Now, I willingly admit any reporter has an equal right to his own individual opinion as the arbitrator himself who awarded the prizes, and also the ventilation of that opinion if he thinks proper at his own free will; but statements directly opposed to facts should, I deem, in every case be held as inadmissible. The statement in italics, "one of the hens had a pea comb," is the very opposite of veritable; and as to the lively markings of both hens, such hens were exhibited many long years before either Brahmas or the reporter himself were known among the breeders of prize poultry. Being myself cognisant of the great care and attention that you have given (and not less so by the party from whom you originally obtained the breed) to Partridge-feathered Cochins for so many years past, I cannot for a moment doubt the nature of your response to a very simple and plain question. Do you keep Brahmas, or have you ever kept them? and is there the barest possibility of any such cross as is thus blankly imputed? By the way, sensational reports like the one alluded to may carry favour for a time, but surely constant adhesion to facts must in the long run prove itself the more estimable system of "reporting," and be far less likely to mislead parties at a distance whose purchases are frequently governed almost entirely by the avowed opinion of "the press."

EDWARD HEWITT.

P.S.—This letter is at your own disposal.—E. H.

## THE POULTRY-KEEPER.—No. 8.

## CREVE-CŒURS.

## HEN.

**Body.**—Well formed, of rough appearance, having some resemblance to the Cochins-China. Of considerable size although set low on its feet. Head strong; crest varying in size, black while a chicken, but white behind after the second moulting. Whiskered, cravated; ears small and hidden; combs and gills short; feathers on the abdomen long and diffuse.

**Gait.**—Quiet and slow.

## WEIGHT, SIZE, AND CHARACTERISTICS.

**Weight.**—Twelve hens should weigh nearly 7½ lbs.—that is to say, about 6 lbs. 10 ozs., some weighing more and some less. Some at two years old weigh as much as 8½ lbs.

**Size.**—From the upper part of the head to under the feet 17½ inches. From the back to under the feet 13½ inches.

**Body.**—Larger than that of the Houdan hen.

**Head.**—Strong and entirely feathered.

**Crest.**—The size is variable, composed sometimes of feathers somewhat short, drooping a little, and leaving the eyes uncovered; sometimes so well feathered that the head is entirely unseen, and the eyes can only be seen from the ground. The crest is sometimes formed of feathers more or less pointed, sometimes of feathers long, regular, and rounded at the ends, which make it very large and nearly spherical.

**Whiskers.**—Thick.

**Cravat.**—Long, hanging, thick, larger at the end than at the top.

**Gills.**—Very small.

**Ears.**—Small, whitish, hidden under the crest and whiskers.

**Nostrils.**—Like those of the cock.

**Beak.**—Like that of the cock.

**Iris and Pupil of Eye.**—Like that of the cock.

**Foot.**—Sole of the foot short, strong; colour black and dark silvery blue.

**Laying.**—Pretty good; eggs very large.

**Incubation.**—Non-sitters.

**Plumage.**—Entirely black with the exception of the crest, which is black the first year, whitens a little the first moulting, and more and more in the successive moultings. There are very fine White varieties of the Grey, both cock and hen. The perfectly Grey are very rare, and the White most plentiful.

## GENERAL CONSIDERATIONS.

This admirable variety certainly produces the most excellent fowls that appear in the French markets. Its bones are even lighter than those of the Houdan. Its flesh is finer, more tender, and whiter, and it fattens more easily. The chickens are unusually forward, for they are fit to be fatted when they are two and a half or three months old, and ready for table a fortnight after. At five months a fowl of this kind is nearly fully formed in shape, weight, and quality. The fat chicken at from five to six months attains the weight of 6 lbs. 10 ozs. The chickens of six months fattened attain to 7½ lbs., and even 9½ lbs. The Crève-Cœurs produce all the fat pullets and fine chickens which are sold in the French markets. Those of the Houdan, though of superior quality, do not come till later. The Crève-Cœur is the finest variety in France for delicacy of flesh, easiness to fatten, and, perhaps, the first in the world in these points. Mr. Baker, however, brought from London for a sale he was having in Paris, a dozen Dorkings, killed, trussed, and ready to put on the spit, and it must be acknowledged that they produced the most wonderful effect on the assembly of amateurs.

The variety of *Merleaux* has very little or no cravat, and no frill. This variety generally furnishes chickens of very inferior size in abundance in the markets of Normandy, but it is in other respects like the Crève-Cœurs, and produces as large fowls when well managed.

The *Caur* variety very much resembles these last, if it were not that it is higher, and its characteristics much less developed.

The varieties of Caumont, Houdan, and Gournay, and the Norman fowls in general are crosses of the Crève-Cœur. It is, perhaps, the variety most tested by crossing, and all the experiments have made it certain that a cross with a pure Cochins-China, or with the produce of pure Crève-Cœurs with Cochins-Chinas yield in farmyards birds of good size and of very delicate flavour.

Always prefer in the crosses an indigenous cock with Cochins-China or Brahma hens.

**Food.**—Give the chickens chopped eggs the first eight days, and till they are two months old mashed barley meal. Afterwards give gradually corn to those destined for breeding, but to the others continue to give meal till they are fattened. This is what they do in Normandy.

## THORNE POULTRY SHOW.

Few, if any, local meetings can boast of a better entry of poultry than Thorne; but the laxity displayed in the carrying-out the rules of the Society is certainly highly calculated to do a permanent injury to the Show. We have always unflinchingly maintained that a rule once laid down for the regulation of any society of this description should be rigidly maintained in each and every instance. This is the only course of safety. But delays at Thorne succeeded each other in quick succession, as it was hoped birds might arrive that were entered, but which in most cases were still absent during the arbitration.

**Dorking** cocks and hens were both very good classes; and as to the *Spanish* classes, they proved most excellent. Capital *Cochins* were shown of all known varieties, the Partridge-feathered especially so. Good *Dark Brahmas* were shown, but the *Light ones* were not of great merit. The *Game* classes were remarkably good throughout for the season, the *Brown Reds* more especially so. The *Hamburgh* classes were capital, particularly the *Spangled*. In *French* fowls Crève-Cœurs were the most noteworthy, *La Flèche* being also better shown than ordinarily. In the *Any other variety of cocks*, *Golden Polands* were first, *Black Hamburgs* second, and *Golden Polands* third. In the class for *hens*, *Silver Polands* stood first, *Golden Polands* second, and a really good *Golden-pencilled Hamburg* third. The *Game Bantam* classes proved to be the cream of the Show, and few could be better shown. *Blacks* were the best entry of the other *Bantams*. *Fancy Ducks* were capital, but the *Rouens* and *Aylesbury* have been shown better at former shows at Thorne. The weather was very favourable, and the meeting a decided success.

(From a Correspondent.)

The pens used were of wood with sliding wire doors, and were very convenient for the examination of the birds. The entries were very good in all sections of poultry and Pigeons, the single-bird system having been adopted, which, whatever its drawbacks, has the advantage to the societies of producing excellent entries. One great mistake of this Committee is that the awards

are not placed on the pens till some time after they are all completed, leaving little time between that and the close of the Show, and thus keeping both exhibitors and visitors in the greatest suspense, at the same time leaving little or no time for criticism of the awards.

**Dorkings** were fair birds in both classes, but the first in cocks, though excellent in other points, was small. In *Spanish* were some good cocks, the first and cup bird being good in all points, but showing the advance of the season to some extent. The second was also a capital bird. The quality of the winners in hens was superb, and we were glad to see quality supersede merely heavy coarse-faced birds, which have been very plentiful of late. In *Cochin* Buff cocks, first was a grand-shaped large bird, but a little pale in colour; second and third better in colour, but not so good in other points. Buff hens were a fair lot; first a large grand hen a little broken-feathered, claimed very readily at £7 7s. In *Brahma* cocks the first was a well-built bird, but not one of the largest, but of capital style, symmetry, and feathering; the second and third pressing very closely. Some did not like the awards in this class, but we think they were made in a most unexceptionable manner. *Black Red Game* were only moderate as regards cocks; the hens were better, and in nice feather; the *Brown Red* cocks comprised some well-known birds of quality, which, however, were quite sore with moulting, the winners being in good feather. The hens of this variety were the best of the Game classes, and the cup was well awarded to a marvellous hen, the second and third being such as will leave no chance for loss of bloom in the first to succeed. In *Ducking* cocks the prizes were not well awarded, the first being large, coarse, open-feathered. Two birds shown by Messrs. Martin and Thornton were far better in all points. The first in *Ducking* hens was the most perfect that has been seen of late in plumage, style, and shape; and the first-prize Pile, one that must be heard of again. The rest were of fair quality, and the hens just moderate. *Hamburgs* were not well treated, being thrust into two classes, which in this quarter is an arrangement to be regretted, as under favourable circumstances the entries would doubtless be very good. *French* were fairly represented, *Crève-Cœur* being to the fore; some very good *La Flèche* were likewise shown. *Bantams* mustered well, the first-prize *Black Red Game* cock being perfection both in style and colour, two points which are seldom combined; the second small, neat, and stylish, but failing in colour. The first in *Black Red* hens was a fitting match for the first-named cock, being a most exquisite specimen, fresh from her maternal duties, and said to be seven years old; the second was also a good hen. Two good *Pile* cocks, of which there was little choice, won in the next class; a specially neat *Ducking* being first in hens, and a grand *Brown Red* pullet of this year second. In the *Variety* class for cocks the first was a mistake, being neither good in style nor comb for a *Black*; the second and third ought by all means to have been first and second; but in hens a capital *Silver Sebright* was first, *Black* second, and a *Pekin* third.

**PIGEONS** were well represented in all the classes, there not being a single bad pen. In *Carriers* Mr. Yardley's Long-faced *Black* was placed first, the second being a good *Dun*; third about the best in the class, but suffering from an eruption on the upper surface of the eye-wattle. If anything, the hens were superior to the cocks, the first, a *Black*, having style of beak and eye-wattle such as would gladden the heart of any connoisseur of this variety. The second was also a *Black* of great merit, and the third a capital *Dun* which we have seen in worse order than at present. *Pouter* cocks were—a showy *Blue* first, second being also *Blue*, and third *Black*, and we recognised some recent winners that were not at all fit for the show pen. In *Hens* *Blacks* were second and third, while the first was a *Blue*, the whole of good style, colour, and marking, in the latter point notably the second-prize hen. *Tumblers* were a mixed class, and the first prize went to a neat small *Almond* cock of good carriage, but not so good in head and beak as the third, which some thought should have been first, the second award falling to a good *Red Mottle* Long-faced, an award with which some differed, but which, in our opinion, was just in a mixed class. There were some good *Jacobins*, but the class was not equal to some we have seen of late. The *Nuns* were very good. *Trumpeters* were mostly of the *Mottle* and *Splashed* Foreign variety, but we hope, and have reason to think, the mania for these is dying out, and that ere long we shall be able to see the grand old fashion of foot-feathering combined with a moderate amount of rose, if the whole cannot be obtained. *Turbits*—*Red* and *Yellow* spike-crowned won first and second, third being a good *Blue* in all except that he was foul-thighed. *Fantails* were a grand collection, and the winners small and stylish; *Dragoons* fair, but *Antwerps* poor. The *Variety* class contained many handsome specimens of the foreign varieties, and some extra prizes were awarded.

**RABBITS**.—Of these two grand *Fawn* bucks stood first and second in their class, the first measuring 22½ inches by 5 inches in ears, the second 22 by 5. Does were also good, the first a *Fawn* of grand points, measuring 22½ by 5 inches; second a *Tortoiseshell*, 21½

by 5½, while the third of the same colour was 22½ by 4½. *Angoras* were a pretty good lot, the first being a large fine-woolled *Rabbit*, the rest somewhat smaller, but still of fair quality. *Himalayans*, with the exception of the winners, were only poor, but the former were neat specimens. *Silver-Greys* were very good as regards the winners, but with these exceptions we saw nothing worthy of notice, the famous No. 15 of *Leeds Ornithological* note being again left out in the cold. The first in *Dutch* was a grand *Tortoiseshell* buck, the only fault being that he is too large; second a good *Black-and-white* in the moult; and third a good *Tortoiseshell*. There were some very large *Rabbits* in the *Variety* class, but the awards were made to smaller specimens of *Belgian Hare* of good quality of coat. We noticed some rough handling of the *Rabbits* by lookers-on after the awards were made, and we think this cannot be too soon put an end to, otherwise exhibitors will not venture their valuable specimens out of their sight. The awards seemed to give general satisfaction.

**DORKINGS**.—Cock.—1, W. Morfitt, Goole. 2, R. W. Richardson, Beverley. 3, J. White, Warley, Northalton. 4, J. Walker, Rochdale. Hen.—1, J. Walker. 2, W. Whitehead. 3, R. W. Richardson. 4, W. Morfitt. **SPANISH**.—Cock.—1 and Cup, R. Newbitt, Epworth. 2, H. Beldon, Goldsfoot. Bingley. 3, J. Powell, Bradford. 4, Leeming, Farnes & Sudall. Rawtenstall. c, S. W. Hallam, Whitwick, Leicester. Hen.—1 and 2, J. Thresh, Bradford. 3, J. Leeming. 4, J. Leeming; Farnes & Sudall. c, R. Newbitt. **COCHINS** (Cinnamon or Buff).—Cock.—1, W. H. Crabtree, Levenshulme. 2, D. & J. Ibeston, Whitby. 3, G. Palfreyman, jun., Sheffield. 4, R. P. Percival, Northenden. Hen.—1, H. C. & W. J. Mason, Birstal. 2, W. H. Crabtree. 3, H. Yardley, Birmingham.

**COCHINS** (Any other variety).—Cock.—1, W. H. Crabtree. 2, W. Whitworth, jun., Longsight, Manchester. 3, Mrs. E. Pryor, Welwyn, Herts. 4, J. Walker. c, W. Whiteley, Sheffield. Hen.—1, C. W. Brierley. 2, H. Beldon. 3, W. Whitworth, jun. 4, Mrs. E. Pryor.

**BRAHMAS** (Dark or Light).—Cock.—1 and Cup, W. Whiteley. 2, Mrs. F. Ansdell, St. Helen's. 3, R. J. Percival. 4, W. H. Crabtree. 5, J. T. Smith, Sheffield; c, M. Wainwright. R. J. Percival. c, Wells & Taylor, Winterton. Hen.—1 and 2, Mrs. E. Ansdell. 3, H. Crabtree. 4, W. H. Crabtree. R. Percival. W. Whiteley. c, J. T. Smith, Sheffield; Dr. J. Holmes, Chesterfield.

**GAME** (Black Red).—Cock.—1, A. Kroyd. 2, J. B. Hepworth. 3, J. Mason, Worcester. Hen.—1, J. B. Hepworth. 2, W. Roe. 3, J. Mason. **GAME** (Brown Red).—Cock.—1, C. W. Brierley. 2 and 3, Sales & Bentley, Crowle. 4, H. E. Martin. c, J. W. Thornton. Hen.—1 and Cup, C. W. Brierley. 2, H. Beldon. 3, Sales & Bentley. 4, H. Butler, Bradford. c, W. Perrin. 5, H. E. Martin. 6, W. Sheard. 7, J. F. Walton, Thorncliffe.

**GAME** (Ducking, or other Grey or Blue).—Cock.—1, Naor. 2, Sales & Bentley. 3, H. E. Martin. 4, H. C. & W. J. Mason. 5, J. W. Thornton. 6, W. Bleasby, Crowle. Hen.—1, Sales & Bentley. 2, J. W. Thornton. 3, J. A. & H. H. Staveley, Driffield.

**GAME** (White, Pile, or any other variety).—Cock.—1, H. C. & W. J. Mason. 2 and 3, R. Walker. Hen.—1, J. F. Walton. 2, H. C. & W. J. Mason. 3, R. Walker.

**ROBINSONS** (Gold or Silver-spangled).—Cock.—1, H. Beldon. 2 and 3, J. Robinson, Garstang. Hen.—1 and 3, J. Robinson. 2, H. Beldon. 4, A. Smith, Halifax. W. G. Waters, Elsham; S. W. Hallam.

**FRENCH** (Any variety).—Cock.—1, J. Robinson. 2, E. Walton. 3, W. H. Crabtree. 4, Mrs. B. Frank. c, Mrs. Cross. Hen.—1, E. Maldon. 2, W. H. Crabtree. 3, Mrs. Cross. 4, R. H. Ashton. c, E. Walton.

**ANY OTHER DISTINCT VARIETY**.—Cock.—1, H. Beldon. 2, J. Robinson. 3, A. and W. H. Silvester. c, Mrs. B. Frank; J. F. Walton. Hen.—1, H. Beldon. 2, A. & W. H. Silvester. 3, J. Newall. 4, Mrs. B. Frank. c, J. F. Walton.

**GAME BANTAMS** (Black Red).—Cock.—1, W. F. Entwistle, Westfield, Bradford. 2, W. F. Addie, Preston. 3, R. Newbitt. 4, W. B. Brook, Fearncliffe. 5, J. Ferry, Cowpen; W. F. Addie. 6, R. Glasby, Crowle. 7, F. Steel. Hen.—1, Mrs. E. Newbitt, Epworth. 2, W. F. Entwistle; W. F. Addie. 3, W. F. Entwistle; J. P. Crossland. c, F. Steel.

**GAME BANTAMS** (Any other variety).—Cock.—1, Mrs. E. Newbitt. 2, E. Walton. 3, R. Kirkcaldy. 4, R. Newbitt. 5, R. J. Hartley, Altrincham. Hen.—1 and 2, W. F. Entwistle. 3, R. J. Hartley. 4, Miss R. Frew, St. Clairtown, Kirkcaldy; W. F. Addie.

**BANTAMS** (Any variety not Game).—Cock.—1, W. Moore, Keighley. 2, R. H. Ashton. 3, H. B. Smith, Broughton. 4, Master A. Frew, St. Clairtown, Kirkcaldy. 5, R. H. Ashton. 6, T. Cropper, Bacup. c, G. Palfreyman, jun.; J. Walls; W. Richardson, York. Hen.—1, Miss J. M. Frew. 2, R. H. Ashton. 3, H. B. Smith. 4, Mr. R. C. Frew, Kirkcaldy. 5, W. Corry, Widdie. 6, T. Cropper, Widdie.

**DUCKS** (Aylesbury or Rouen).—1, T. P. Carver. 2 and 3, J. Walker. 4, T. Halmshaw, Earlsheaton.

**DUCKS** (Any other variety).—1, 2, and 3, H. B. Smith. 4, J. Walker.

**GESE**.—1, J. Walker. 2, J. B. Hepworth. 3, No competition.

**GIBBS**.—1, Mrs. Moor. 2, H. S. Stott. 3, J. Parkin, Woodhouse.

**SELLING CLASS**.—1, C. Gravil, jun., Thorne. 2, Mrs. F. Ansdell. 3, Furness and Sudall. 4, J. Powell. 5, Perrin; Mrs. Cross; G. Holmes, Driffield; E. Williams. c, J. Walker; J. Mills, Middle Healey. Disqualified, T. Cropper.

**PIGEONS**.

**CARRIERS**.—Cock.—1, H. Yardley, Birmingham. 2, E. Horner, Harewood, Leeds. 3, P. R. Spencer, Hereford. 4, J. E. Crofts. 5, E. Horner. Hen.—1, H. Yardley. 2 and 3, E. Horner.

**POUTERS**.—Cock.—1, J. Hairsine, Hull. 2, E. Horner. 3, J. E. Crofts. 4, H. Beldon. c, H. Yardley. Hen.—1, E. Horner. 2, J. Hairsine. 3, J. E. Crofts. 4, H. Yardley.

**TUMBLERS**.—Cock or Hen.—1 and 3, H. Yardley. 2 and 4, A. & W. H. Silvester.

**JACOBS**.—Cock or Hen.—1, J. E. Crofts. 2, A. A. Vander Meersch, Tooting.

3, R. W. Richardson. 4, H. Beldon. 5, A. A. Vander Meersch.

**NUNS**.—Cock or Hen.—1, R. W. Richardson. 2 and 3, Rev. A. Brooke. 4, J. Earnshaw.

**TRUMPETERS**.—Cock or Hen.—1, W. Harvey. 2, A. A. Vander Meersch. 3, E. Horner. 4, H. Yardley; W. Harvey.

**TURBITS**.—Cock or Hen.—1 and 2, J. E. Crofts. 3, H. Yardley. 4, A. & W. H. Silvester. 5, E. Horsfall, Grassendale, Liverpool; E. Horner; H. G. Poole, Bradford.

**FANTAIL**.—Cock or Hen.—1, J. Walker, Newark. 2, J. F. Loversidge, Newark.

3, E. Horner. 4, H. Yardley; G. Packham; W. H. Toulminson.

**BARB**.—Cock or Hen.—1, W. Harvey. 2, E. Horner. 3, R. P. Spencer. 4, J. Thresh.

**DRAGOONS**.—Cock or Hen.—1, A. Smith. 2, H. Yardley. 3, R. Woods. 4, R. W. Richardson; W. Harvey; G. Packham.

**ANTWERP**.—Cock or Hen.—1, E. Horner. 2, W. Lund. 3, J. Cleveland, jun. 4, J. Walls, King's Heath, Birmingham.

**MAGPIE**.—Cock or Hen.—1, H. Beldon. 2, E. Horner. 3, A. A. Vander Meersch. 4, E. Horner; J. Walls.

**ANY OTHER VARIETY**.—Cock or Hen.—1, R. W. Richardson. 2, W. Harvey; C. Dennison. 3, H. Beldon; J. E. Crofts. 4, M. Ord; J. E. Crofts.

**ANY UNBRED**.—Cock or Hen.—1, W. Harvey. 2, G. Packham. 3, H. A. Ayrton.

**RABBITS**.

**LOP-EARED**.—Buck (All properties).—1, F. Banks, Doughty Street, London.

2, H. Whyman, Chesterfield. 3, J. Wharton, York. *Doe* (All properties).—1, Allison, Sheffield. 2, J. Irving, Blackburn. 3, F. Banks. *hc*, F. R. Edwardson, Liverpool.  
*ASOOTS*.—*Buck or Doe*.—1 and 2, H. Sweetman, Falford, York. 3, J. Hallas, Huddersfield.  
*HIMALAYAN*.—*Buck or Doe*.—1, W. Whitworth, jun., Manchester. 2, H. Sweetman. 3, H. Cawood, Huddersfield. *hc*, S. M. Pence, Thorne.  
*SILVER-GREY*.—*Buck or Doe*.—1 and 2, K. H. Glow, Wakefield. 3, A. Hudson, Hull. *hc*, J. H. Brand, Barton-on-Humber.  
*DUTCH*.—*Buck or Doe*.—1, F. Sabbage, Northampton. 2 and *hc*, J. Irving. 3, B. N. Mason.  
*ANY OTHER DISTINCT VARIETY*.—*Buck or Doe*.—1 and 2, T. H. Dowd. 2, J. Hallas. *hc*, J. Marsland, Goolse.  
*SELLING CLASS*.—*Buck or Doe*.—1, R. W. Mason. 2, J. E. Crofts.

Mr. Edward Hewitt, of Birmingham, was the Judge for poultry; Mr. Cannan, of Bradford, for Pigeons; and Mr. Fletcher, of Hull, for Rabbits.

## TREATMENT OF POULTRY AT SHOWS.

At Thorne Show I was surprised to see up-grown men take their walking-sticks and poke the sides of the poultry in pens. I remonstrated with one in particular, and he became very abusive. I think that at all our shows people ought to give-up their sticks as when going to any other exhibition, on paying a halfpenny or 1d. for each. As regards the Thorne Show, I consider the management to have been very good, the specimens were well cared for, and the birds, &c., all cleared off in due course. I also noticed some very rough management at the station. There were several pens left until late in the station for the East Riding district waiting for the train, and left at the outside of the opposite platform until the train was in sight—in fact, within a few hundred yards, and they had to be thrown away; some hampers containing heavy fowls, some Rabbits, and Pigeons. I attended to my fowls myself, having suffered previously from such ill-management. Then the Secretary is called to task for something that he knows nothing of. All fowls want carrying carefully, particularly when there is a cock and hen, as they hrnise each other. I saw plenty of hampers lying on their flat instead of being in their upright position.—W. M.

## THE ROYAL COUNTIES (HANTS AND BERKS) POULTRY SHOW.

The above Show was held this year at Reading, and opened on Tuesday last. The poultry pens were nicely arranged in a spacious tent, which was well ventilated, and afforded ample accommodation for the large number of fashionable visitors.

*Dorkings*.—In the Coloured Mr. Burnell matched his first and second-prize Bath and West of England cocks with two good hens, and repeated his Bath and West of England victory. We think pen 8 should have superseded pen 4 for the third prize. In the class for Silver-Greys and Whites Mr. Creswell's well-known pen of Whites, although a little out of condition, secured the first prize.

The *Cochins* were a very moderate class. A pen of Buffs not very grand were first, a beautiful pen of Whites second, and a pen of Partridge third. Pen 36, a pair of Buffs, we thought deserved notice; in many respects we considered it equal to the winners.

*Game*.—In the Reds the first prize went to a pair of Blacks, neat, but not in style equal to pen 45, which we should have liked to have seen in the prize list. The class for Any other variety of Game contained a few fair specimens, and Mr. Matthews was deservedly first.

*Polish*.—In the Golden class only three pens competed, a very superior pair winning. Silvers were good, but we liked pen 65, *n.c.*, better than either the first or second-prize pens. The hen here was beautifully marked, and had a fine crest. Our opinion, we think, will be confirmed by the owner, as we found the *n.c.* pen entered at twenty guineas, while the first-prize pen was marked in the catalogue at £2 2s.

*Spanish*.—Here the birds were shown in better condition than we expected to see them at this period, and we thought the class generally better than the Spanish we saw at Bristol last week, Mr. Jones's birds excepted. The awards were satisfactory.

The *Hamburghs* were not largely supported, and the birds were poor in quality.

*Brahmas*.—The Lights came first. Most of the birds were out of condition, and many of the best very yellow, the first-prize cock notably so. The hen in this pen was also wanting in both markings and leg feathers; pen 114, *n.c.*, and 112, *n.c.*, we thought better. The second prize was awarded to Mrs. Holmes. This lady entered two pens, one at £15, unnoticed, and the other at £3, which obtained the second prize. We agreed with the owner, and thought the unnoticed pen the better. In the Darks the awards were a great mistake. Pen 141 must have escaped the Judge's attention, as both cock and hen were superior in every essential to any other birds in the class.

*Bantams* (Game).—Here again we differ from the Judge; we should have placed pen 155, *n.c.*, first. The cock in this pen was equal in colour to the first pen, and in every other point better. The first-prize cock was very long in the wing, with

thick sickles, and wanting in style. Pen 156 was second. Here, again, our opinion was confirmed by the owner; this pen was entered at 41 10s., while the same owner entered the pen we have referred to as deserving the first prize at £25. The class for Any variety of Bantams was moderately good.

The *French* fowls were good, and here we should have liked to have seen pen 170 in the prize list.

The Any variety class was an interesting one, a grand pen of Malays being first, some Black Hamburgs in sound condition second, and some pretty Silkie's third.

*Ducks, Geese, and Turkeys* were small in number, and with two or three exceptions were of only average merit.

The *PIGEON* prizes were not of great value, and the entries were consequently small. In Carriers two pens of Blacks were first and second, but we should have liked to have seen their positions transposed. We thought the second-prize pen a trifle better in the eye, and superior in colour to the first. Both the cocks were down-beaked. Tumblers, only two pens competed. Fantails obtained five entries, every pen good; a rather uncommon pair of Blues winning. Homing birds appeared in great force.

*RABBITS*.—Three classes for these completed a very successful exhibition, which appeared to be highly appreciated by all who patronised it.

*DORKINGS*.—Coloured.—1 and 2, T. C. Burnell, Stratton, Micheldever. 3, M. D. Dunn, Ingleswood, Hungerford. *hc*, O. E. Creswell, Early Wood, Bagshot; R. Treadwell, Tring; Rev. G. F. Hodson, North Petherton, Bridgwater.

*SILVER-GREY or WHITE*.—1 and 2, O. E. Creswell. 3, H. Feast, Swansea.

*COCHINS*.—1, R. P. Percival, Northenden, Manchester. 2, R. S. S. Woodgate, Pembury, Tonbridge Wells. 3, Hon. Mrs. Sugden, Wells. *hc*, W. O. Hodges, Bagshot. 4, R. P. Percival, H. Feast.

*GAME*.—Black-breasted and other Reds.—1, C. H. Ames, Henley-on-Thames. 2, Miss Osborn, Yarnton. 3 and 4, J. Mason, St. John's. *hc*, G. Cotton, Sunningdale; Capt. C. F. Terry, Culverlands, Burghfield, Reading. *Any other variety*.—1, S. Matthew, Stowmarket. 2, Capt. C. F. Terry. *hc*, D. J. Thomas, Brecon; Capt. C. F. Terry.

*POLANDS*.—Golden.—1, H. Feast. 2, W. O. Hodges, Bagshot. *Silver*.—1 and 2, J. Hinton, Warminster. 2 and 4, C. Bloodworth, Cheltenham.

*STAMPS*.—1, H. Brown, Patney Heath. 2, T. Boulton, Lenton. *hc*, Nicholls Bros., Camberwell.

*HAMBUROGS*.—Gold pencilled.—1, H. M. Maynard, Holmewood, Ryde, Isle of Wight. 2, Mrs. G. M. Rolfe, The Hendre, Monmouth. *hc*, H. Feast. *Silver*—pencilled.—1, H. Feast. 2, N. Barter, Plymouth.

*HAMBUROGS*.—Golden-spangled.—1, P. Hanson, Stonehouse. 2, J. K. Harris, Warminster. *hc*, T. Hageman, Tettenhall, Wolverhampton. *Silver-spangled*.—1, T. Chamberlain, Windsor. 2, Mrs. G. Rolfe. 3, J. Messer, Reading (2).

*BRAMIA POOTRA*.—Light.—1, P. Hames, Palgrave, Diss. 2, Mrs. J. T. Holmes, Bath. 3, J. Bloodworth, Cheltenham. *hc*, H. M. Maynard; R. P. Percival, Northenden, Manchester; J. Pares, Postford, Guildford; H. D. Hoare, Brown, low, Esher, Southampton. *Dark*.—1, A. Palmer, Reading. 2, E. Ennor, Bristol. 3, Lady Bolton, Basingstoke. *hc*, R. J. Smith, Avebury, Calne; R. P. Percival, Northenden, Manchester; Mrs. R. Tompkins, Reading; Rev. J. Ellis, Barchest.

*BANTAMS*.—Game.—1, A. W. Parry, Reading. 2, W. S. Marsh, Winkland Oaks, Deal. *hc*, G. Chilton, Littleton, Guildford; G. S. Sainsbury, Devizes; W. S. Marsh. *Any other variety*.—1, J. Watts, King's Heath, Birmingham. 2, R. H. Ashton, Mottram. *hc*, R. Wilkinson, Guildford.

*FRENCH* (*Crevé-Cœur, La Fleche, or Houdans*).—1, H. Feast, Swansea. 2, Mrs. C. Hill, Alton, Hants. 3, Rev. N. J. Ridley, Newbury. *hc*, Mrs. C. Hill; W. Dring, Faversham; H. Feast.

*VARIETY CLASS*.—1, J. Hinton, Warminster (Malays). 2, Miss A. Binney, Wallingford (Black Hamburgs). 3, R. S. S. Woodgate, Pembury, Tonbridge Wells (White Silkies). *hc*, T. Harding, Elvetham, Winchfield (Scotch Dumpy); J. B. Lee, Alresford (Breda); W. Wilder, Cosham (Blue Andalusian); H. Feast; Capt. C. F. Terry, Culverlands, Reading (White Malays).

*DUCKS*.—Rouen.—1, Rev. G. F. Hodson, North Petherton, Bridgwater. 2, G. Hanks, Malmesbury, Wilts. *Aylesbury*.—1, T. Kingsley, Tring. 2, J. Wheeler and Sons, Long Compton. *Any other variety*.—1, G. S. Sainsbury (Black East Indian). 2, R. Wilkinson (Shovellers). *hc*, Miss J. Milward, Newton St. Loe (East Indian); Mrs. J. T. Holmes, Bath (Peruvian).

*GEESE*.—1, W. Turvill, West Woldham, Alton.

*TURKEYS*.—1, Rev. N. J. Ridley.

### PIGEONS.

*CARRIERS*.—1, H. Yardley, Birmingham. 2, H. M. Maynard, Holmewood, Ryde, Isle of Wight.

*TUMBLERS*.—1, G. Packham, Exeter. 2, H. Yardley.

*FANTAILS*.—1, H. Yardley. 2, Miss J. Milward. *hc*, H. M. Maynard. 3, G. Packham.

*TRUMPETERS*.—1, C. Norman, Westerfield, Ipswich. 2 and 4, A. A. Vander Meerck, Tooting, London. *hc*, G. Packham.

*MACPIES*.—1, H. Yardley. 2 and *hc*, C. J. Hitchcock, Oxford.

*HOMING PIGEONS*.—1, G. Parker, Fareham. 2, J. Albury, jun., Reading. 3, J. W. Barker, Newtown, Reading. 4, G. Cotton, Sunningdale, Berks. *hc*, G. Cotton; J. Albury, jun.; J. W. Barker. 5, J. Slyfield, Reading; C. G. Butler, Reading.

*ANY OTHER DISTINCT VARIETY*.—1, G. Packham. 2, T. Holmes, Lower Sydenham. *hc*, H. M. Maynard; J. W. James, Hereford; P. K. Spencer, Hereford; W. Dawson, Slough.

### RABBITS.

*LONGEST EARS*.—1, F. Banks, Doughty Street, London. 2, G. A. Biddis, Newbury.

*FOREIGN*.—1, Miss R. Carnac, Wilton-on-Wye, Hereford (Silver-Grey). 2, R. Turner, Farham (Belgian Hare). *hc*, W. M. Harris (French Grey); T. W. Anns, Clapham (Chinchilla); W. Salmon, jun., Reading (Chinchilla). 3, J. Albury (Silver-Grey).

*VARIETY*.—To include all points.—1, P. Warren, Southampton. 2, F. Banks (Lop-ear). *hc*, G. A. Biddis (Lop-ear).

Mr. John Bailly was the Judge.

## RUGBY PIGEON, CAGE BIRD, AND RABBIT SHOW.

This was a first attempt, and considering the limited amount offered in prize, and that the day of exhibition was a Monday, the result was such that we have no hesitation in recommending the Committee to risk a more extensive prize list. Three small rooms of the "Workman's Rest" (a kind of club-house or library), were used respectively for the Pigeons, Rabbits, and

**Cage Birds.** The arrangements were good, and the decorations with foliage profuse producing a good effect.

In **PIGEONS**, for which Mr. Yardley's pens were used, Mr. Yardley won the lion's share of the prizes as well as the cup for the best pen in the Show, with his exquisite little Almond cock. A few pens were empty, but what is worse, we are sorry to relate that some birds were in such miserable condition as to be totally unfit for the show pen, and we would advise Mr. Spencer to give them the rest and attention they require, otherwise that gentleman will come to see the need when too late, and some valuable birds will be lost to the fancy. In Carriers, a Long-faced Black was first, with a Dun nestling second, and an adult Dun third, many of the others being either wanting in eye-wattle or too much crowded in face. Antwerps came next, a Short-faced Silver Dun of the right stamp was first; a medium-faced Blue of good style, &c., showing capital flying points, second; while the rest were all good in some of the leading points of the variety. For Turbitta there was an extra prize in the shape of a drinking fountain, and this was easily won with a very pretty Red, shown by a local breeder; second a good Yellow; and a Blue very highly commended. In Barbs, a capital broad skulled Yellow cock was first, with a Black of high quality second. In Fantails the winners were White of grand quality, some young birds being also noticed. The first was rather large, but capital in style and carriage. Of Jacobins only one was good, and that a Red; while in Dragons were some high-class birds, the first being a Blue, and the second one of the best Whites we have seen of late. In the Selling class Red Barbs were first, with White Pouters second, a neat pair of Black Magpies being highly commended.

For **CANARIES** there was but one class with thirteen entries, but among them were some of the best birds of the season, and first was placed a blazing variegated beauty of the Derby type; second a capital Jonque Cinnamon in his natural plumage. Third came a neat four-pointed, even-marked Mealy Norwich; there was also one very highly commended, which, however, though better in the eye marks, lost much on the wings. Some very good Mealy Cinnamons were also noticed. Only one Mule was shown, but this was a really good four-pointed bird of the Goldfinch cross, and in splendid order. In the next class were only two birds, a Bullfinch and a Goldfinch, but we seldom see the former variety shown in such bloom. Parrots were few but good.

**RABBITS.**—A silver cup was offered for these, and was won by a perfect Angora, an award which for once we are glad to see appreciated, for often have we heard the contrary when the Lops have been left out; yet we think, when a common-sense view is taken, it will be seen that where the cups are for general competition it is but reasonable to give the other varieties their due where the quality is really good for the class. It is but fair, however, to say that some pens were empty, and notably those of Mr. Banks in Lops, and Mr. Hudson in Silver-Greys. In Lops there were but four Rabbits of any note, although thirteen were entered. The first was a grand old Tortoiseshell buck of extraordinary quality of head, eye, and colour. The second, not nearly so good in condition, head, and eye, was a Fawn-and-white, 21 by 4½ inches. Third, a doe, Fawn and white, 20 by 4½ inches; and the highly commended 19 by 4 inches, a Black-and-white. The entries were good in all the rest of the classes, but only two Silver-Greys of any note were in the pens when the awards were made, but these were of the right shade of colour. Himalayans, except the two winners, were had, the winners even, although good in head properties, were very mossy in feel. Angoras were good, the winners fine and silky in down, and well-filled in face and neck; but some were rather small, and one of the best was left out on account of a bare patch on the stern, which would be all the better of a slight application of a weak solution of carbolic acid or some other antiseptic. Of Dutch there was a large and fine exhibition, although there was not one perfect Rabbit, but, perhaps, as perfect as can be had. First came a Tortoiseshell, perfect except in size; equal first a Blue-and-white doe, faulty only in a few white hairs on the rump, very small and neat; while the second prize went to good Black-and-whites.

The Committee in a most generous manner allowed several extra prizes, and the feeding and general care were such that exhibitors need have no fear in entrusting their pets in their hands.

**CARRIER.**—Cock or Hen.—1 and 3, H. Yardley, Birmingham. 2, A. Bentley, Richmond. *vhc*, W. Nottage, Northampton. *hc*, J. T. Hinks, Humberstone. 1, E. Carter, J. Palmer, Kailworth. P. R. Spencer, Hereford.

**PORTER.**—Cock or Hen.—1, W. Nottage. 2 and *vhc*, L. Watkin, Northampton. 3, P. R. Spencer. *hc*, H. Yardley. *c*, J. Palmer.

**ANTWERP.**—Cock or Hen.—1, H. Yardley. 2, A. Carruthers, Luton. *hc*, H. Yardley. A. Bentley (2); A. Carruthers; W. Bates, Rugby (2). *c*, C. England, Rugby; W. E. and Rugby.

**T. SHILLER.**—Cock or Hen.—Cup, 1, and 2, H. Yardley.

**TURBIT.**—Cock or Hen.—Fountain, 1, and *hc*, W. Daniels, Rugby. 2 and *vhc*, H. Yardley.

**PARB.**—Cock or Hen.—1 and 2, H. Yardley. *vhc*, P. R. Spencer. *hc*, J. E. Ait. *th*, Rugby.

**FANTAIL.**—Cock or Hen.—1, W. H. Tomlinson, Newark. 2, J. F. Loversidge, Newark. *hc*, J. F. Loversidge; H. Yardley; A. Smith, Rugby.

**JACOBIN.**—Cock or Hen.—1 and 2, H. Yardley.

**DRAGON.**—Cock or Hen.—1 and *hc*, W. Smith, Liverpool. 2, A. Bentley. *vhc*, H. Yardley (2). *c*, T. Woods.

**SELLING CLASS.**—Any variety.—1, H. Yardley. 2, W. Nottage. *vhc*, R. Webb Lesington (Black Carriers); *hc*, J. T. Hinks (Magpies); W. Bates (Red-checker Homing Antwerps).

**CAGE BIRDS.**  
**CANARY.**—Any variety.—1 and 2, J. Adams, Coventry (Norwich and Cinnamon cocks). 3, W. Smith, Birmingham (Norwich cock). *vhc*, J. Adams (Cinnamon and Norwich cocks); W. Smith (Norwich cock); *hc*, Miss Lancaster, Rugby (Crested); J. Adams (Norwich cock); R. Whale, Rugby; W. Smith (Cinnamon cock). *c*, W. Smith (Norwich cock).

**MULE.**—1, J. Adams.

**GOLDFINCH, BULLFINCH, OR LINNET.**—1, Master J. Buchanan, Rugby (Bullfinch). 2, W. F. Wood, Rugby (Goldfinch).

**BRITISH BIRD.**—Any other variety.—1, Miss Lancaster (Brown Owl). 2, Master E. Bromwich, Wolsiton (Dove).

**PARROT.**—Any variety.—1, Mrs. Salmon, sen., Rugby (Grey). 2, Miss A. W. Buchanan, Rugby (Australian Cockatoo).

**RABBITS.**  
**LOP-EARED.**—Buck or Doe.—1, J. Jones, Wolverhampton. 2 and *vhc*, W. Canner, Leicester. *hc*, J. D. Roberts, Cambridge.

**SILVER-GRAY.**—Buck or Doe.—1, J. T. Hinks. 2, A. W. Whitehouse, Northampton. *vhc*, J. Hallas, Huddersfield.

**HIMALAYAN.**—Buck or Doe.—1, W. Donkin, Driffield. 2, J. Hallas.

**ANGORA.**—Buck or Doe.—Cup, 1, and 2, T. Garner, Kingsthorpe, Northampton. Extra 2, J. & C. Martin, Kettering. *vhc*, Master J. E. Leeson, Rugby. *c*, J. Hallas.

**DUTCH.**—Buck or Doe.—Equal 1, H. E. Gilbert, Rugby; F. Sabbage, Northampton. Equal 2, J. & C. Martin; G. P. & R. Hackett, Haverstock Hill, London. *vhc*, G. P. & R. Hackett. *hc*, H. E. Gilbert; Mrs. Passingham, Milton, Cambridge; J. & C. Martin.

**SELLING CLASS.**—Buck or Doe.—1, — Canner. 2, F. Sabbage.

Judge of Pigeons, Cage Birds, and Rabbits, Mr. Hutton, Pudsey, near Leeds.

## YORK GALA—THE CANARY SHOW.

I did not expect to see either a large Show or a great display of quality at this time of the year, and in neither respect was I disappointed. Few breeders can afford to separate pairs, and fewer still care to send breeding stock having any pretensions to show-form, to be exposed in a tent for three days and two nights, even in the month of June, which, in the north, well sustains the character rendering necessary the advice—

"Till June's out, cast not a clout!"

There are, at the same time, some exhibitors who keep a few standing dishes constantly ready, which give something of character to a summer show; failing which, such exhibitions are not worth crossing the threshold to see, consisting in the main of birds which in their present condition would not be noticed in any third-rate provincial show in the legitimate season.

The first-feather part of the Show was the most attractive, affording some room for speculation as to the prospects of the in-coming season; and not much of that either, since visitors were kept entirely in the dark as to the names of the exhibitors, with the exception of the winners, whose names appeared on the cards. This system may do well enough in a show which is only one of many attractions at a gala, and which cannot affect the interests of the fancy any further than the boundary of the tent enclosing it; but a show without a catalogue is incomplete to a degree that indicates it is but a catch-penny thing to minister to the attractions of a day—an advertised competition in which the competition exists but in name, and is of so little moment as to merit not even the record of a penny broadsheet. Of the old specimens it is not necessary to speak, and it is looking too far into the future to predict much of the young ones, which may not fulfil the promise of their youth. Crest-breeders, however, may care to know that there was nothing among the young division to cause much alarm, though the first in Dark-crested Clean-bodied Norwich is sure to be heard of again when moulted, and may make a star. A few decently-marked birds were also staged, but if some of the last year's old ones moult up well, they have as yet nothing to fear from anything which appeared at York.—W. A. B.

**BELOIAN.**—Clear Yellow or Buff.—1, — Hawman. 2 and 3, T. Mitchell.

**NORWICH.**—Clear Yellow.—1, J. Cinnamon. 2, — Bexson. Clear Buff.—1, M. Evans. 2, Mrs. Quinn & Son. 3, — Bexson.

**NORWICH.**—Even-marked Yellow.—1, — Burton. 2, S. Tones. Even-marked Buff.—1 and 2, J. Adams. 3, — Burton.

**NORWICH.**—Clear Yellow.—1, Mrs. L. Belk. 2, W. Lister. 3, J. Whitehead.

**Clear Buff.**—1, J. Whitehead. 2, J. Garbutt. 3, W. Hutton.

**YORKSHIRE.**—Even-marked Yellow or Buff.—1, Mrs. S. Belk. 2, J. Stevens. 3, W. Lister.

**ANY BREED.**—Clear-crested Yellow or Buff.—1, — Triffitt. 2, — Belk.

**NORWICH.**—Crested, Yellow or Buff with Green, Grey, or Grizzled Crest.—1, J. Cinnamon. 2, J. Calvert.

**NORWICH.**—Crested, Even-marked Yellow or Buff.—1, J. Cowe. 2, Barth and Son.

**YORKSHIRE.**—3, P. & C. Cuss.

**CINNAMON.**—Jonque.—1, — Bexson. 2, J. Adams. 3, Barwell & Sons. Buff.—1, S. Tones. 2, J. Adams. 3, — Bexson.

**LIZARD.**—Golden-spangled.—1, T. Mitchell. 2, J. Martin. 3, — Watson.

**SILVER-SPANGLED.**—1 and 3, J. Stevens. 2, — Belk.

**GOLDFINCH MULE.**—Even-marked Yellow or Buff.—1, — Hawman. 2, J. Adams. 3, Harland & Sons. Dark.—1, — Bexson. 2, — Boulton. 3, — Lister.

**ANY VARIETY.**—Clear Buff.—1, Barwell & Sons. 2, — Bexson. 3, Mrs. S. Belk.

**COLLECTION OF ENGLISH OR FOREIGN BRANDS, OR BOTH, NOT LESS THAN TWELVE SPECIMENS.**—1, W. Lister. 2, J. Calvert. 3, Mrs. Calvert.

**PARROT.**—Any variety.—1, Miss Inglis. 2, Miss Mitchell. 3, Mrs. Calvert.

**GOLDFINCH.**—Moulted.—1, — Hawman. 2, J. Martin. 3, W. Hutton.

**BULLFINCH.**—1, J. Whitehead. 2, W. & C. Burmiston. 3, Harland & Sons.

**LINNET.**—Moulted.—1, J. Whitehead. 2, Harland & Sons. 3, K. Pearson.

**EXTRA PRIZES.**—Miss Palmer; — Cienasy; — Wund.

BIRDS BRED IN 1874.

~ NORWICH.—Yellow.—1 and 2, J. Dawes. 3, R. Johnson. Buff.—1, J. Dawes. 2, — Burton. 3, J. Clemens. ~ NORWICH.—Even-marked Yellow.—1, J. Burton. 2, — Burniston. 3, J. Taylor. Even-marked Buff.—1, J. Dawes. 2, Mrs. Culvert. 3, — Reed. ~ NORWICH.—Dark-crested Yellow or Buff.—1, — Burton. 2, — Triffitt. 3, J. Culvert. ~ NEST YELLOW.—1, — Harland. 2, Petty & Cuss. 3, Mrs. Calvert. ~ NEST BUFF.—1, — Reid. 2, Harland & Son. 3, Quin & Son. ~ NEST CRESTED.—1, Quin & Son. 2, R. Smith. 3, Mrs. Calvert. ~ NEST LIZARD.—1, W. Evans. 2, J. Martin. 3, —. ~ CAGE OF SIX CANARIES, IN VARIETY.—1, J. Calvert. 2, R. Smith. ANY VARIETY OF CANARY.—1, Barwell & Son. 2, — Benson. 3, Mrs. S. Belk.

BATH AND WEST OF ENGLAND SOCIETY'S BRISTOL SHOW.

No. 2.

THE Pigeons are never a strong point at the Bath and West of England Shows—that is, the numbers are not great; this year just under a hundred pens. Also the great breeders, as a rule, do not send their birds; nor the great dealers—Mr. Fulton's loft was unrepresented. It is true Mr. Yardley sent some, but they were a mixed lot; still, out of his twenty pens seven took a prize. I hoped also to see Mr. Bishop, of Dorchester's Dragoons, specially his Silvers, out; he, too, did not show any birds. Now, I do not much regret that there should be shows where small or new fanciers should be able to take prizes—nay, I would say that I should positively like to see a show of birds that never had been prizetakers, and from fanciers who were new in the fancy. Such a show would be interesting (better than looking, for instance, at the same Runts over and over again), and it would greatly encourage beginners, for there is such a charm in seeing your name in a prize list, at least everyone who has exhibited seems to think so. I notice that the varieties of Pigeons are much less known, that is by name, than the varieties of fowls; this arises from the fact that as yet Pigeon books have been in the hands of few except Pigeon fanciers. Books of natural history, or of birds only, give a word about a Carrier, a Pouter, and a Fantail, and with them a poor engraving, but other varieties are unknown. This will be remedied in future years; but had the fancy been as much in the front as poultry was brought by the Cochin mania, the result of which was the publication of that handsome volume of Johnson and Wiegfield's in 1853, then some such book would as long ago have been published, and been laid on drawing-room tables, and the pictures looked at, and hence the names of the varieties of fancy Pigeons would have been known. It is amusing to listen to the remarks of visitors (the ignorant public!) at a Pigeon show. "What are these birds with something curious on their beaks?" said a lady at Clifton, pointing to the Carriers. "Goodness! I don't know," replied her companion. "You may well say curious, for they are more curious than beautiful." Another lady said to the gentleman on whose arm she leaned, "What sort are those?" pointing to the Barbs. Now, I grieve to say there are gentlemen who in the presence of ladies wish to appear to know everything; this was one, for he boldly replied, "Ah! those are what are called—ah! I believe, *Fantail-Tumblers*!" I do not think that was a wise man—at least he did not know much about Pigeons.

Leaving the Fantail-Tumblers I proceed to the real, not imaginary Pigeons.

*Carrier* cocks (any colour).—First a nice young bird well shown, and the Carrier's best colour—black. Second a Dun. The highly commended Dun bird was worthy, and will be better. In this class Bath, Bristol, and Weston-super-Mare carried off the honours. Carrier hens (any colour).—First and second both Duns, and the first a better bird than the second.

*Pouter* cocks (any colour).—I suppose Meales, Sandies, Silvers, Duns, Splashes, Ringheads, &c., all admissible, friend Huia. First, Blue-pied, foul-thighed, but honestly shown, large but not elegant: owner, Rev. W. C. Bullen, of Bath. One of the highly commended was also Mr. Bullen's, hence he was a successful reverend. Second a White. Pouter hens.—First a Black, too flagged, but a bird which gave me more pleasure to look at than any Pouter in the Show. Second, bad condition, foul-thighed, but a large heavy bird—the largest in the class; Blue, but not too good a colour.

*Runts*.—Mr. Yardley's, as usual; only two entries; as usual, also, Blue and Silver, and as usual good.

*Dragoons* (any colour) cock and hen. My opinion of a Dragoon is that it should be a light, airy-looking, tight-feathered bird—"a right little, tight little" fellow, with nothing heavy about him, and as remote as possible from its heavy uncle the Carrier. First a pair of nice Yellows. Second Whites, one of them extremely slender and nice-looking—a thorough Light Dragoon, neither Horseman nor Carrier. Highly commended were white and brown-barred Silver. Every bird shown save Mr. Yardley's was West of England.

*Fantails* were a good class. I was glad to see the Scotch blood present; it is much needed in our heavy, almost motionless English birds, some of them no more elegant than a Turkey cock. Out of the eight entries six pens were noticed.

*Trumpeters*.—Poor Trumpeters! They must blow their own trumpets, for I will not.

Contrasting with the Trumpeters came a lot of badly matched but capital *Barbs*. Then *Archangels*, now too seldom seen, though they appear to be favourites with those whom loving youths call angels. *Turbits* more numerous than excellent. *Tumblers*, any variety.—First, very good Almonds; second, Blue Balbs. One of them had a good head (507), good coloured blue, but too long in face. Two other fair Yellow Balbs, and a nice pair of Kites, which I should have given more than an h.c. to.

Next came *Nuns*, and *Owls*, and *Jacobins*; all mixed up and confused in the catalogue, the arranger of the type being possibly a Good Templar, and one who had had too much ginger bear this hot weather! *Nuns*, none too good; *Owls*, ditto; *Jacobins*, ditto.

The Frillbacks in the Any other variety class were extremely nice, though I suppose rare in England. I notice that wherever shown they are worthy of a note. Such were the Pigeons, and very creditable to the West of England fanciers, who showed about seventy out of the ninety-eight pens. Save Mr. Yardley's twenty almost all were from the west. Though I could have wished that more Pigeons had been shown, yet I must say the birds were as a whole an interesting lot.

Although not connected with either poultry or Pigeons, I must notice one thing new, at least to me, in the Show, and which, as it attracted great crowds, deserves a note. This was the competition for sheep-shearing, the prizes being offered by a local society. Imagine a very long tent, one hard to see down from its great length, and two rows of shearers the whole length; each man dressed in white, and the sheep growing whiter each minute, as the white underwool rolls from its back, cut by the shearers' deft hand. In truth 'twas an attractive sight, as the crowds all along the open sides of the tent testified. I thought of Thomson's description of the sheep-shearing:—

"Where ranged in lusty rows  
The shepherds sit, and what the sounding shears.  
How meek, how patient the mild creature lies!  
What softness in his melancholy face!  
What dumb complaining innocence appears!  
Fear not, ye gentle tribes, 'tis not the knife  
Of horrid slaughter that is o'er you waved;  
No! 'tis the tender swain's well-guided shears,  
Who, having now to pay his annual care,  
Borrowed your fleeces, to you a cumbrous load,  
Will send you bounding to your hills again."

Literally in this case to their hills, for the shepherds were Mendip Hill shepherds; the prizes were from the Mendip Hill Sheep-shearing Society; and the sheep were from the Mendip Hills. A pleasanter sight I have seldom seen.

The Bath and West of England Show was in every respect a splendid success: 110,000 people entered the turnstiles, and the money received was nearly £9000. The only thing that fell short was food. There was long waiting for refreshment on the Tuesday, and, on the shilling days, late in the day nothing to be had. This surely is a great pity. People grow fainter and fainter, and have a headache in addition to weariness and hunger. Large quantities of refreshments of various kinds were provided, but not sufficient. Much money was made, no doubt, but more might have been made. There was not a fit staff of waiters. They did what they could, but they were not numerous enough; and the customers were wearied with delay even on Tuesday, while on Friday food was not to be had. This was the one blot on a capital Show. Oh! Australian Spiers & Pond! ye could do it. Oh! help us poor English another year with enough to eat, sold to us in fairly quick, I don't say double quick, time; for waiting while hungry is more than tedious—'tis vexatious.—WILTSHIRE RECTOR.

WOOD PIGEON AND DOVECOTE PIGEON PAIRED.

SINCE my last letter I have seen that of "ALMOND TUMBLER," from which I infer that he considers my first communication unreliable, either from my untruthfulness or want of knowledge. If he does not mean this, what does the concluding sentence of his letter mean:—"I should like to know whether these two birds will really breed together?"

It would not have been so very remarkable if the two birds had been in confinement. Such unions are not uncommon. We find that in cages the Canary will breed with a Goldfinch, a Linnet, a Siskin, and even with a Bullfinch, but if the birds were all at liberty they would most probably mate with their own species; and the reason why I sent my first letter on the subject was the remarkable fact that a wild and a tame bird of different species mated together. My son sent the young bird, taken from the nest (which was in a hole in the scar), to Mr. Frank Buckland, who told me he had carefully dissected it, but found no resemblance to the Wood Pigeon. What anatomical differences or resemblances he looked for or expected I do not

know, but the plumage so nearly resembled that of the young Ring Dove, that I expected he would go on that tack and pronounce it a young Wood Pigeon. If, then, my story is to be believed, the fact remains that a pairing has taken place between a Ring Dove and a common devocate Pigeon; and I again ask the question, Has such a union (when the birds were free to choose) been previously noticed?—T. G.

### VAGRANT PIGEONS.

A FEW weeks since I obtained a letter from a Pigeon fancier who was in the same difficulty as I find myself, that of being deserted by his Pigeons, and which was considered an unaccountable and unusual misfortune by "WILTSHIRE RECTOR." The Pigeon loft is roomy, and furnished with all that we suppose should make their home pleasant to the inmates, including a saltcat and looking-glass, but the youngsters when a few weeks old show an irrepressible fancy for paying visits to the devocotes of the farm houses in the neighbourhood. By degrees the visits become prolonged. Sometimes the truants are out at night, till at length they entirely desert their original home. The birds which have once begun to breed remain, but there is scarcely one young one of this spring now left. They are well fed, and while paying visits some time during the day, do not forget to return to their old home about the dinner hour. There is a skylight in the roof of the loft, and it has been suggested that it would be more to the taste of the Pigeons if the loft were darker. Will any experienced Pigeon fancier tell me if a light loft is objectionable, or give a clue to the cause of my misfortune? I should be glad to know the proper method of feeding a squeaker which has been deserted by its parents.—G. P.

### MEANING OF SCAR.

ABSENCE from home prevented my seeing the letter of "WILTSHIRE RECTOR" until to-day or I would have replied sooner. The scar referred to in my letter is a precipitous bank 50 or 40 feet high, and is tenanted (in addition to the Pigeons) by Starlings, Sand Martins, and Rabbits. The true Stock Dove is not known here, nor the Rock Pigeon, whilst the Ring Dove is very common. If it did not look like boasting, I should say few people know the birds frequenting the district better than I used to do, having been an outdoor naturalist from my childhood, but seventy-six years have somewhat dimmed some of my faculties, so that I do not distinguish the notes of the various songsters so well as I used to do; but I will refer "WILTSHIRE RECTOR" to "Loudon's Magazine" from 1830 to 1836, for various articles signed "T. G.," which may, perhaps, enable him to judge whether I am likely to be mistaken.—T. G.

### THE PIGEONS OF SAN MARCO.

THE Pigeons of St. Marcus are the pride of every true Venetian. Extravagant patriots have left these birds considerable legacies, and the common people hold them in a sort of religious awe. They believe that the weal and woe of the city depend upon the well-being of these sacred birds. There is a Venetian saying in Venice that "when the Pigeons leave St. Mark's Place the sea will swallow us up!"

Venice treats her *protégés* with a truly maternal care. Whoever maltreats a Pigeon is instantly arrested. If it is his first offence he is released on payment of a fine of fifty lire, about \$10; if not the first offence, he is compelled to expiate his crime in prison.

In the olden time, in the days of the doges, the laws for the protection of these birds were more severe than at present. As late as the beginning of the last century, the "murder" of a Pigeon was not only punished with death, but the family of the criminal was compelled to pay a heavy fine.

Every day at two o'clock these feathered favourites are fed, when a special dove-bell is rung. The little animals are always punctual. If the bell-ringer is behind time they fly round the belfry in large flocks, with the view, apparently, of reminding the laggard of his duty. On more than one occasion they have intentionally neglected to ring the bell, but the Pigeons were not to be trifled with. They seemed to know that they were in the right, and finally made such an ado that the promenaders on the piazza insisted that the cruel jest should have an end, for, said some of them, "San Marco will otherwise be offended!"

The feeding of the Pigeons is one of the most charming scenes the stranger can witness in Venice. A beautiful young girl appears upon the square, holding the corners of her apron with her delicately-formed and well-kept hand, and distributes right and left smiles and greetings, as well as food, to the gathering multitude. All her movements are graceful and harmonious—perhaps she is a little too self-conscious, but, nevertheless, she is charming. There she stands, a genuine daughter of the south, and scatters the golden kernels among her fluttering *protégés*.

As already intimated, there are various superstitious stories and beliefs concerning these Venetian Pigeons—the most of

them being of respectable age, dating back at least a couple of hundred years. To this day every pious gondolier firmly believes that they fly three times round the city daily.

"If you see six Doves sitting on the cross of the Capanile, you may be sure we are going to have a spring flood," said an old grey-bearded boatman on the Rialto bridge.

Over the entrance to St. Mark's church there is a famous lion, the symbol of the power and greatness of Venice. Whenever an important political event is about to take place that nearly concerns Venice, the Pigeons gather about this lion, so say the Venetians, and hold a council. This occurred in 1848, and in 1866. When the Emperor of Austria decided to barter the dialoyal province off to Napoleon III., and when it was proposed that a *plébiscite* should decide Venice's future, there were hundreds of seers who had foreseen these events, "for the Doves," said they, "are experienced diplomats, and the lion council is infallible."

The sacred Pigeons, according to the generally accredited legend, came originally from Palestine. A troubadour of Provence, who accompanied the French crusaders, occupied his few leisure hours in playing the lyre and in singing. The tones of his instrument were so sweet, so seductive, and the melodies of his song were so full of delicacy and feeling, that a pair of Doves of remarkably sensitive natures were so overcome by them, that when the troubadour embarked at Jeppa for home, the two birds lit on his helmet, and accompanied him to Venice.

Here the troubadour met a maiden with whom he was not less fascinated than were the two Pigeons by his music. He forgot his beautiful Provence, the majestic Rhone, and his fair-haired country-women, remained, and married. The two Pigeons followed his example. And the people looked upon the poet and the Pigeons, and their posterity, as beings of a superior order. To this day poetry is the favourite art of the Venetians.

Another legend asserts that the Pope, in the year 1371, presented the doge a pair of Pigeons, from whom all the sacred Pigeons are descended. This is the story believed by the priests and the more zealous supporters of the church.

The truth is, that neither version can be satisfactorily authenticated; the only advantage the latter has is the fact that it is strictly within the limits of possibility. A Venetian chronicler of recognised authority records the following incidents, which strip the genealogy of the sacred birds of everything bordering on the miraculous.

On a Palm Sunday, in the fifteenth century, the Venetian clergy determined to do something for the amusement of the lower orders. They bought one hundred Pigeons in Padua, burdened their wings with little sand-bags, and then let them fly from the top of St. Mark's across the Piazzetta. The assembled multitude were at liberty to catch the birds, and do with them as they would.

The immediate result of this ingenious idea was a riot, which cost several persons their lives. They threw stones, sticks, bottles, and even knives at the birds, without reflecting that these objects, in falling, might do serious injury. The people who were hit refused to accept it as a joke, and the consequence was that a general *melée* ensued, which had a tragic end. In the tumult the greater part of the Doves escaped, while the less fortunate ones found hiding-places in the rich ornamentation of the cornice and cupolas of the church.

The Venetian's hatred for cats goes hand-in-hand with his pious devotion to his Pigeons. In Venice cats are seldom seen. As a natural enemy of birds they are under a sort of ban. During the last century, four of these "harmless, necessary" animals were burned on the side of the Grand Canal, as "witches."

Since 1846 the Pigeons of Venice have become doubly dear to the citizens; they remind them of the trying but glorious days of the siege. Venice was beset on all sides by the Austrians. Starvation stared the entire population in the face, but the Pigeons of St. Mark's remained unharmed. Daniel Manin, the great dictator, respected the traditions of his countrymen, and withheld not one kernel from the daily allowance of the sacred Pigeons. The moral effect of this measure more than counterbalanced the material loss in provisions. Venice fell, but its citizens consoled themselves with the proud consciousness of having resisted to the last, and that, too, without destroying one of their favourite flock.—(Appleton's Journal.)

SHEFFIELD POULTRY SHOW.—We have just had handed to us the prize schedule of the Sheffield Poultry Show, to be held on July 18th and two following days. The poultry comprise forty-eight distinct classes, with prizes of 30s., 15s., and 7s. 6d. in each class. The Pigeons embrace thirty-eight classes, 20s., 10s., and 5s. being the respective prizes. Rabbits and Cats will also add attractions to this Show. Besides all this, in poultry there are to be awarded thirteen special prizes, consisting of valuable table cutlery, electro-plated flower-stands, urns, and spirit-frames. Twelve equally coveted, because useful, prizes are given to the best of the Pigeons; and even the Rabbits and Cats do not lack a similar encouragement. When it is remembered how many years back, when similar descriptions of

extra prizes were given at Sheffield, all of which time proved to be of the best quality, no doubt the competition under the present schedule will ensure a very extended competition. The management of the Sheffield Show is sure to be good, as old practical exhibitors have placed themselves at the helm; and under such guidance every rule is sure to be strictly enforced, so that perfect order and regularity may rule the day.

### HOPEFUL SIGNS.

"GIVE us a guide" is a cry that comes from a large section of humanity. Many men of all grades and occupations are entangled in difficulties and surrounded by fogs. Their efforts to be successful have been failures; they have never been able to touch the fringe of the garment of the good thing which has for a long time been before their imaginations. Many bee-keepers after years of trial and expense have to lament their want of success. Constant failures have nearly wearied them out. New kinds of hives, inventions of all sorts, are adopted. Disappointments follow. Is there no road to success? Yes, there must be, for many bee-keepers realise large harvests of honey. They are satisfied with both their bees and their hives. New and improved kinds are not in the line of their thoughts. They often yearn for fair and warm weather. Such bee-keepers are their own teachers and guides. We fancy that by-and-by the major part of the bee-keepers will be successful. The natural history of bees, and their profitable management, are much more widely known now than they were some years ago. Large hives are bought up as fast as they are made; indeed, the demand for them is far greater than the supply. The lives of bees are not sacrificed in the brimstone pit as they once were in thousands of instances. Wherever the light of knowledge dawns the pit is considered a barbarity. Stock hives are made doubly strong by adding to them the bees of condemned hives in autumn. Many letters come from country districts, asking where honey and honeycomb can be sold. Never in my time has bee-keeping been so popular as it is now; never have I known so wide and extensive a demand for swarms and stocks from persons wishing to commence bee-keeping. All this, too, after so many years unfavourable for honey gathering. Honey and honeycomb are, so far as my experience goes, in greater demand than they were many years ago. In England the demand is far greater than the supply. Prices range between 1s. and 1s. 6d. per pound wholesale. They have never been higher during the last fifty years. Sugar, too, never was so cheap in this country as it is now; 1 lb. of good sugar for 3d. makes 2 lbs. of syrup; and 15 lbs. of sugar, costing only 3s. 9d., will keep a very strong swarm in excellent health from September to March. Feeding bees in bad seasons now is a mere trifle compared to what it was in our younger days, when raw sugar cost 10d. per pound, and loaf sugar 1s.

When I commenced this letter it was my intention to give a few details of "odds and ends," or things to be remembered in bee-keeping; but now, having been led into another track, it will be closed with a remark or two on the fundamental principles of good management.

1st. Large hives, simply constructed, cosy, and warm. Ever since 1844 I have been repeating this cuckoo song: If you want honey and honeycomb in great quantity, or great profits, keep large hives. The experience of every year tends to make us emphasise the advice so often given. Small hives may be used for increase of stock till large hives take their place; but large results cannot be obtained from small hives, which, when full, gather and yield but little honey. The vast powers and industry of bees can never be developed and understood where small hives only are used.

Last winter a gentleman living about two miles distant from this place sent his gardener for a couple of hives of bees. He wanted them to set the fruit in his peach houses. The gardener chose the largest hive I then had, measuring 16 inches deep by 18 inches wide. Some time ago I called to see the gardens and bees. I found the larger hive had had a moderately-sized hive placed on it as a super. This super, larger than most hives in England, was half full of combs when placed on the other. I removed the super, which I found full of honey and brood, weighing, I should think, about 35 lbs. The large hive was heavy, and filled with brood and honey from side to side and from bottom to top. Never have I had a more convincing instance of the value of large hives than this. In both hives there would be, probably, 5000 cubic inches of space well filled. Any intelligent apiarist, on seeing these hives dissected, would very naturally have concluded that no one yet has been able to estimate aright the fertility of queen bees or the value of large hives. The honeycomb was taken from the super and placed on dishes—I guess about 22 lbs., and the broodcombs were put aside. A very large swarm was taken from the old hive and put into a new hive, 18 inches by 12 inches, before I left the garden.

2nd. Swarming is better than non-swarming as a system of management. It is natural, and tends to health and activity.

There are differences of situations, pasture, and seasons, and therefore it is difficult to lay down a rule or guide as to when swarming should be discontinued. In this neighbourhood we take all the first swarms we can get till the end of June, and some second swarms. In late seasons we take some early in July, but not often. After June, swarming is prevented by ckes or enlargements, or by supering.

3rd. Young combs and young queens; both are important. Hives with young combs generally thrive better than those with combs in them more than two years old. There are exceptions; still the rule holds good. Queens die when they are four years old, and many of them die when only three years of age; it is therefore unwise to keep a queen beyond three years.

If these simple hints be borne in mind, and carried into practice, the bee-keepers of England will produce ten times as much honey as they do at present; satisfaction will take the place of disappointment, and wherever milk can be obtained from the cow, and water from the pump (in the country), bee-keeping will be a source of enjoyment to the rich, and a source of profit to the poor.—A. PETTIGREW.

### BONNER'S METHOD OF ARTIFICIAL SWARMING.

I AM glad to find old Bonner getting somewhat of his due at last. I often remarked to friends that I believed he was the real author of much that has been published of late years under other names. In support of this, and for the benefit of your numerous readers, I take the liberty of enclosing the following verbatim copy of Bonner's directions for artificial swarming, extracted from his book of 1795. Of course his method applies best to the common straw hive, though I have practised it successfully with wooden ones. He says:—"To drive all the bees out of a hive, at any season of the year, either to reinforce another hive or to raise an artificial swarm, the hive must be gently turned up and the top of it placed in an eke, or in a hole made in the ground on purpose, to prevent it from being overturned. An empty hive of the same size must then be gently placed over it, mouth to mouth, and a sheet or large cloth wrapped round the joinings of the hives to prevent any of the bees from getting out. The undermost hive must then be rapped with both hands in the manner a drum is beat, rapping chiefly on those parts of the hive to which the edges of the combs are fixed, and avoiding the parts opposite to the sides of the combs, lest they should be loosened, and by falling together crush the bees between them as well as the young in the cells. Even the queen herself might be in danger of suffering. By not adverting to this I have seen the loose combs and bruised bees fall out upon turning up the hive, all of which are a considerable loss. The older any hive is there is the less danger of loosening the combs, and the more bees there are in it the sooner will they run into the new hive, for the concussion of the hive by the rapping alarms them as an earthquake alarms mankind, and they run to the upper hive in search of a more safe habitation. Those that enter first, finding themselves safe, invite their brethren by their sounding to follow them, which they quickly do. The sheet may then be removed, and the edge of the upper hive next the right hand lifted up, when, upon a narrow inspection, the queen, sometimes will be observed to go up along with the rest.

"When all the bees are thus removed into the new hive it may be placed where the old one stood, which will collect all the bees together, and within ten minutes they will fall a-working as busily as any natural swarm. It is necessary before this operation to remove the hive 8 or 10 yards at least from every other hive to prevent disturbance from other bees. An empty hive should also be placed where the old hive stood to amuse those bees belonging to it that may return loaded from the fields. This operation may be very easily performed at any hour of the day, but the safest time is when they are most busy at work, as they are not then so ready to sting the operator. In this manner I have taken off four artificial swarms in one forenoon, and hardly received a single sting, for the operation is quite easily performed, especially in the middle of the day." Then follow directions for reinforcing weak hives, &c., and the following curious note:—"Indeed, there is hardly anything that is requisite to be done about bees that I would not take in hand to perform with sufficient time and attention. I could put twenty hives, for instance, into one if necessary; I can cause my bees to rear as many queens as I please; I can rob my bees of part of their honey at any time; I could carry a hundred bee hives to London or Russia; I could rear five thousand bee hives in a few years if desired by any gentleman of property; I could travel through the streets of Edinburgh with three swarms of bees about me unhurt; I can take a swarm out of any hive at any time; I can take ten thousand bees from ten different hives and unite them into one hive; and I can reinforce a weak hive with bees from any number of other hives, and from being the worst make it the best hive in the county; I can unite the bees of forty hives into thirty, twenty, or ten hives, and next summer

divide those ten hives again into forty swarms; if I have a weak hive suffering from robbers I can strengthen it with more bees, and make them fit to rob any hive in the neighbourhood; if I have a hive of bees perishing with poverty or famine, I can make it the richest hive in the place, or within many miles around; I can take a common bee egg, and cause the bees to raise it to be either a queen or a common bee as I please; I can make my bees rest upon myself or any person near me without offering us the smallest injury; and I can make them fall upon us with the fury of as many dragons, so that we would be glad to fly with as much precipitation as a few rioters would do before a regiment of dragoons." The above will be a "reel in a bottle" to some; to the practical bee-keeper it will afford, may be, a hint or two.—A SCOTTISH SCHOOLMASTER.

[Schirach and Wildman both advocated artificial swarms. Were they not Bonner's predecessors? Wildman published his book in 1768.—Eds.]

## OUR LETTER BOX.

**FEEDING DUCKLINGS (W. H.).**—You are feeding ducklings as you feed chickens, and the marvel is they have not all died. Give them oatmeal in a very shallow vessel filled with water. A soup plate, or even an ordinary plate will do. If they are entirely gone off their feed, take a soup plate, cut a sod of grass the size of the bottom of the plate, put it in, put some gravel and some oatmeal on it, and then put water enough to make the meal swim—no more. They will eat this and will get very dirty, but it will bring them round. Assisted by the water and the dirt the bread may be given with impunity. If even this will not tempt them, there remains only one thing. Take some raw meat, horseflesh will do (Ducks rather prefer it), and cut it in strips as nearly resembling worms as possible, put these in water, and if the ducklings look askew at these we despair.

**HENS LAYING TWICE A-DAY (P. C.).**—We do not believe that hens lay twice per day, if we are to understand thereby that an egg was laid in the morning, and another in the afternoon. Two may be laid in twenty-four hours, but to make us believers too must be laid in six days. You may think that unreasonable, then we will be satisfied with eight in the time.

**UTILISING COCK CHICKENS (G. L.).**—We are almost tired of telling querists that the best way to thin out the cock chickens is to kill them. You will not find buyers for them. When you have killed them you may do as you like with them, or do with them as Sussex housewives do with everything—put them in a pudding. We pledge you our appetite (not a small one) that it is a good dish. Cut them in joints, add two kidneys cut in small pieces, some thin slices of ham, and some oysters if you have them. Put all in a sweet crust not too thin, put that in a basin, tie a cloth over it, boil it gently for a long time. Turn it into a dish. Then throw open the folding-doors of the dining-room, and announce a dish fit to put before a king. You will tell the truth. Some people say imagination is better than reality. Just at this moment we do not believe them—L P.M.

**FERTILITY OF PIGEONS' EGGS (R. W.).**—We should have no doubt whatever as to the fertility of the eggs. It does not depend on constant companionship. Lime thoroughly elaked and mixed with salt, sand, and gravel, is very good for them.

**YOUNG CANARIES MORING.**—It makes some difference in the after-well-doing of young birds whether they leave the nest early, from fright or being disturbed, or whether they remain all they turn out of their own accord. In the former case they shiver about in corers, or sit on the perch the picture of misery, and in the latter they stow themselves away as comfortably as possible like the pieces in a Chinese puzzle. Once interfere with the arrangement and you have some difficulty in fitting each piece to its proper hole. In a nice nest of say four, it is amusing to see a young bird hop on to the side of the nest, give himself a shake, look at the little warm hole he has just vacated, think twice about the wisdom of leaving it, and then quickly pop back again, apparently fully convinced by his short survey of the world that there are worse places than home. It may be that your young birds are not very strong, and at their age it is quite common for them to sleep a considerable time during the day, especially if alone—I mean if the cock be not with them—and unaccustomed to the duty of hunting for their own food. If the cock be with them he will keep them awake, and they will keep him awake too. But it may be that they are out of sorts. Blow the feathers from the breastbone; if it be plump they are all right, but if it be sharp, and the bird be wasting, give it a drop of castor oil, and you will find that when the bowels are put right the bird will soon pick up its crumbs and be lively enough.—W. A. BLAKSTON.

**TRANSFERRING BEES (H. E., Oldham).**—Your hive which swarmed May 15th, must now be filling with brood, which would be sacrificed if you were to put the bees into a bar frame hive now. But you might smoke the bees and examine the hive. If the young queen is still hanging fire, and no brood visible, we advise you to drive out the population immediately. Chloroform and all narcotics are disappointing. There is nothing like driving, a perfectly simple and easy process. Chloroform has a disgusting effect upon bees, making them void their excrement. No one, we believe, who has tried it has ever repeated the experiment. We have tried fumigation with a very effective narcotic—mouse-kiln byssus, but never should think of using it again. Your other stock which swarmed more recently is just in a condition to be driven and turned out.

**DRONE SLAUGHTER—BEES NOT SWARMING (W. H. Payne).**—Drones being useless members of society after the fertilisation of young queens, they are destroyed by the bees. Those which go with first swarms are also destroyed, being of no use there. During inclement weather, when hives are threatened with starvation, the bees destroy living drones and tear unhatched ones out of their cells. It is not easy to say what was the cause of the twelve drones you have found being killed. Sometimes in the midst of summer, bees, after abandoning all idea of swarming, destroy their drones. Your hive that has been ready to swarm for a fortnight will probably do so a few days after the wind changes. With an east wind bees are generally reluctant to make preparations for swarming. With a warmer atmosphere it is quite the contrary—they swarm readily as a rule. But bees have their whims and fancies; in some seasons they are loth to swarm, and we have known hives ripe for swarming for months and never swarm. The bees clustered outside their

hives till they filled almost every cell with honey. There is no accounting for such whims.

**FORCED SWARM OF BEES (J. D. P.).**—The fact of your bees building comb is evidence undoubted of the presence of their queen. Your Sherrington bar-and-frame hive ought to have given you a second swarm such a summer as this. Perhaps it will have done so ere this is in print. We suspect the agitation at the month of the hive was only preliminary to this. You need not fear to take off your supers as often as you please for examination of the stock hive; it will not retard or disturb the bees injuriously if only you are gentle in your movements. A whiff of smoke is an indispensable preliminary. Put them aside separately while your examination of the hive takes place, and replace them as carefully.

**BREEDING DOGS (C. L. M.).**—It is not advisable to adopt the plan you suggest, but if you have no alternative you must. Perhaps in a solitary instance no evil result would ensue. No diseases of the kind you indicate need result from the connection. Dip a feather in turpentine and insert it in the gullet of the chicken, and repeat the process morning and evening.

## METEOROLOGICAL OBSERVATIONS, CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp of Soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1874.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
June.										
We. 17	30.113	52.3	52.2	N.	58.3	69.3	45.8	117.5	49.1	—
Th. 18	30.284	54.1	52.2	N.	58.4	60.4	51.1	75.1	51.0	—
Fr. 19	30.295	51.1	48.2	N.	57.8	66.6	48.8	119.8	49.2	—
Sat. 20	30.189	55.9	53.1	N.E.	59.2	58.6	51.2	68.8	48.0	—
Sun. 21	30.430	59.8	50.8	N.W.	56.7	70.2	41.4	116.1	87.3	—
Mo. 22	29.954	59.8	62.0	N.	57.6	72.7	41.2	119.5	84.6	—
Tu. 23	30.408	62.7	55.3	S.	59.4	72.2	49.2	118.0	45.2	0.723
Means	30.125	56.6	62.1		58.1	67.1	47.4	115.0	45.5	0.723

## REMARKS.

17th.—Very wet in the early morning; but fine and warm in the after part of the day. As the rain fell before 9 A.M., the amount was recorded against 16th—i.e., in last week's table.

18th.—Rather dull morning; but much finer in the afternoon and evening.

19th.—Dull and rather cold morning; but very pleasant afternoon and evening.

20th.—A dull, dark, cold, and comfortable day throughout, but no rain.

21st.—A beautiful bright sunny day, and not unpleasantly hot.

22nd.—Rather hazy in the early morning, but quite bright by 10 A.M., and continuing so all day; rather hot in the sun.

23rd.—Fine early, rather cloudy between 11 and noon, but very fine after; wind occasionally rather high.

24th.—Between 2 and 4 A.M. very heavy rain, amounting to nearly three-quarters of an inch.

A week of pleasant dry weather, frequent hot sun, but being tempered by northerly winds the air was quite cool; in fact, the 9 A.M. temperature has been lower than for a month past.—G. J. SYMONS.

## COVENT GARDEN MARKET.—JUNE 24.

BUSINESS has considerably improved during the past fortnight, and a good attendance of buyers has been brought together by the large amount of foreign produce now disposed of by auction in the market at least twice, and sometimes three times daily, consisting of Cherries and Apricots. Some good Cherries are also now coming from Kent and the western counties, and bring from 8s. to 12s. per sieve of 24 lbs. Vegetables are good, though somewhat scarce in consequence of the dry weather.

## FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	doz	0 0 to 0 0	Nectarines.....	lb.	0 0 to 0 0
Apricots.....	doz	2 0 4 0	Nectarines.....	doz	8 0 15 0
Cherries.....	box	1 0 2 6	Oranges.....	doz	100 4 0 16 0
Chestnuts.....	bushel	0 0 0 0	Peaches.....	doz	10 0 21 0
Currants.....	4 sieve	4 0 0 0	Pears, kitchen.....	doz	0 0 0 0
Black.....	doz	0 0 0 0	dessert.....	doz	0 0 0 0
Figs.....	doz	6 0 12 0	Pine Apples.....	lb.	4 0 8 0
Filberts.....	lb.	1 0 1 6	Plums.....	1 sieve	0 0 0 0
Cobs.....	lb.	1 0 1 6	Quinces.....	doz	0 0 0 0
Geeseberries.....	quart	0 6 0 0	Raspberries.....	lb.	0 0 0 0
Grapes, household.....	doz	1 6 0 0	Strawberries.....	lb.	1 0 5 0
Lemons.....	doz	8 0 12 0	Walnuts.....	bushel	10 0 18 0
Melons.....	each	4 0 8 0	ditto.....	doz	2 0 2 0

## VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	doz	8 0 to 6 0	Lettuce.....	doz	1 0 to 2 0
Asparagus.....	doz	3 0 6 0	Mushrooms.....	pot	2 0 3 0
Cabbages.....	doz	0 0 0 0	Mustard & Cress.....	pot	0 2 0 6
Beans, Kidney.....	doz	2 0 0 0	Onions.....	hashel	4 0 7 0
Broad.....	bushel	6 0 0 0	Pickling.....	quart	0 6 0 0
Beet, Red.....	doz	0 9 1 6	Parley per doz.....	bunches	2 0 4 0
Broccoli.....	bushel	0 1 0 0	Parasies.....	doz	0 9 1 0
Cauliflower.....	doz	1 0 1 6	Pears.....	quart	1 0 2 0
Capsicums.....	doz	1 0 0 0	Potatoes.....	bushel	8 6 6 0
Carrots.....	bunch	0 6 1 0	Kidney.....	doz	4 0 8 0
Cauliflower.....	doz	2 0 4 0	New.....	lb.	0 0 0 3
Celery.....	bushel	1 6 2 0	Radishes.....	doz	1 0 1 0
Coleworts.....	doz	2 6 4 0	Rhubarb.....	bushel	0 3 1 0
Cucumbers.....	each	0 6 0 0	Salsify.....	bushel	1 6 0 0
Cumbers.....	doz	0 0 0 0	Scorzera.....	bushel	1 0 0 0
Endive.....	doz	2 0 0 0	Sen-kale.....	basket	0 0 0 0
Fennel.....	bunch	0 3 0 0	Shallots.....	lb.	0 8 0 0
Garlic.....	lb.	0 6 0 0	Spinach.....	bushel	2 0 3 0
Herbs.....	bunch	0 9 0 0	Tomatoes.....	doz	2 0 4 0
Horseradish.....	bushel	8 0 4 0	Turkeys.....	bunch	0 3 4 0
Leeks.....	bunch	0 9 0 0	Vegetable Marrows.....	doz	2 0 3 0









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